Gleanings in Bee Culture

ESTABLISHED 1873

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MAY, 1936

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The Monthly Honey Market

U. S. GOVERNMENT MARKET REPORT
Information from Producing Areas (first half of April).

California Points: Southern California—The weather was rather unsettled, with some rain and cool weather at the start of the period, but with temperatures more nearly normal toward the close. The average colony has 8 to 10 frames of brood, and some are reported with up to 14 frames. The orange bloom was held back by cool weather, but the flow has now started and some scale hives are reported making 10 to 12 pounds a day from orange bloom. The nectar was at first very thin but is now somewhat thicker. Average colonies are not taking off as much nectar as they could because many are still building up. Outside the orange area colonies are often in a critical condition with regard to stores, though they are working some on live oak, alfilaria, eucalyptus, off-bloom white sage, and other flowers. Varying reports are received of the condition of sage plants. Trading continues slow, with the market tendency weaker, especially on the lighter types of honey. Remaining lots of old crop honey are being offered freely and at lower prices. Eastern demand has recently been limited, and export demand exceedingly light. New crop orange honey will be on the market by the first of May. Sales reported by beekeepers in ton lots or more, per lb., at southern California delivery points: Orange, extra white, 6-6½c; few, 6½c; white, 5¾c; sage, water white, 5⅝-6c; few higher; extra white, 5¼-5¾c; white, 5-5½c; buckwheat-sage, light amber to extra light amber, 4½-4¾c; some higher, but mostly 4⅝-4¾c. Beeswax has been offered in moderate volume, with the market about steady at 20-21c per lb., delivered Los Angeles. Imperial Valley—Plants in the foothills are coming along slowly, with prospects rather poor. In the irrigated sections of the valley flowers are blooming normally, but the alfalfa acreage has been so much reduced that the crop will necessariy be curtailed. Very little old crop honey remains unsold. The last sale of light amber to extra light amber alfalfa was reported at $5.65 per 120 pounds. Inquiry for honey is reported light. Central California—Warm, sunny weather followed a cold, frosty period at the close of March, and bees are in good condition though short of stores. Some colonies are being moved into the orange belt, and bees are also working on various wild flowers. Recent rains have improved crop conditions. The market has been quiet with little buying being done. Because of the lack of activitv on the part of the dealers, and because beekeepers are now throwing on the market honey which they had been holding for higher prices, there is a weaker tone evident to the market. Sales by beekeepers in ton lots or more, f. o. b. central California delivery points: Extra light amber cotton-alfalfa, 4-4¼c; some 4½c; light amber to extra light amber sage, 5-5½c; some 4¾; light amber spikeweed, 4-4¼c; light amber to extra light amber buckwheat, 4-4½c; light amber to extra light amber manzanita, new crop, 4½c. The light offerings of beeswax have been used chiefly for foundation. The beeswax market has been firm at 19-21c per lb., f. o. b. central California delivery points. Northern California—Clear, warm weather prevailed over most of this section. Colonies are generally in good condition with an abundance of young bees. Bees have been working an eucalyptus, mustard, late cherries, apples, and other fruit trees, and the condition of the main honey plants has been improved following the rains. Frosts of late March damaged fruit trees considerably. The honey market has been quiet with a weaker tendency as the time for new crop honey approaches. Sales reported by beekeepers in ton lots or more, per lb., f. o. b. northern California delivery points: Extra light amber to white star thistle, 5-5½c; extra light amber blue curl, 4½-5c; light amber fruit bloom, 3¾-4c; light amber mixed wild flowers, 4-4¼c; light amber to extra light amber manzanita, 4¼c.

Pacific Northwest—West of Cascades: Recent warm weather has brought dandelions, early fruit trees, vine maple and Oregon grape into bloom some days late and bees are actively gathering pollen and some nectar. Rain is needed for the development of honey plants. Fireweed honey is about gone. Good demand reported for local lots extracted at 7c per lb. East of Cascades—Bees have had little opportunity to fly because of cool weather. Early fruit bloom was delayed by the cold weather but is now in bloom and dandelions are abundant. Colonies generally will not be up to their usual strength for the fruit bloom and many beekeepers are ordering package bees from the South. Honey is moving rather freely, and beekeepers are receiving 5½-6c per lb. for light amber to white sweet clover, with 8⅝c per lb. reported for small pairs of light amber alfalfa.

Intermountain Region—As the season advances stocks of honey continue to lessen and very few large lots now remain unsold. Sales of at least three cars were reported during this period, two of which were white to water white sweet clover and alfalfa at 6c per lb., f. o. b. shipping point, with one car amber to extra light amber sold at 5c per lb. without cases. Less carlots white to water white sweet clover-alfalfa, 5¾-6c; small pails, 6½-9c per .b.; extra light amber, 5-5¼c per lb. Comb honey has sold at $2.50-3.25 per case. Beeswax, wide range, 16-20c per lb.

Southwestern States: South central and southwestern Texas—Recent cool weather has delayed the honey flow somewhat, but soap bush is blooming, catsclaw is in fine condition, and other plants look well, though it is said to be rather dry for horsemint. Sales reported extracted, 60s or more, 5-8c per lb.; mostly 6c; some sales, 4½-5c, with cans furnished; small pails, 6-10c per lb.; bulk comb, small pails, 6½-8c per lb.; 1-lb. glass jars, 12½ per lb. Country run beeswax, 17-18c per lb. Good demand reported for package bees. Northeastern Texas—Package bees and queens have started to move north and the demand is so heavy that beekeepers are doubtful if they can fill all their orders this year. Southeast Texas—Ratan, blackberries, and other plants are furnishing a profusion of bloom, but cold weather and high winds have kept bees confined to the hives for some days, and many colonies are on the verge of starvation. This will necessitate extensive feeding if brood rearing is to be maintained. Good local demand reported for honey. Oklahoma—Hard freezes early in the month killed much vegetation in northern and central Oklahoma, including most fruit buds.

Northeastern States: New York—There has been little opportunity for flight because of cold, rainy weather. In parts of the state flood damage was serious.

Summary—Abnormally cold weather during the first week of this period shifted to abnormally warm weather west of the Mississippi, although east of the river it has continued cool, confining bees to the hives. To winter losses are now being added losses resulting from spring dwindling, which in many yards have

been serious. Shipments of package bees and queens from the South have been delayed because of unfavorable weather, but are expected to assume record proportions when the weather turns warm. Commercial beekeepers in the clover belt are in many cases making preparations for expansion of their business, being encouraged by apparently favorable crop prospects. The precipitation in much of the Southwest has been extremely light and dust storms have been serious, but elsewhere moisture is generally abundant, with satisfactory prospects for irrigation water in the West. Bees have been working on ti-ti, blackberry, orange, palmetto, agarita, and clover in the South, with oranges and eucalyptus furnishing nectar in California. Stocks of honey are everywhere light, but beekeepers who have made efforts to keep their customers supplied with honey have generally been able to do so even though in some cases it involved purchasing honey from the West. Many beekeepers have simply been turning down orders, making no effort to get in honey with which to fill inquiries after their own honey was exhausted. Beekeepers who bought when necessary to take care of their orders feel that their method gives much more assurance of maintaining an active list of customers than as if they sold only as long as their own honey remained. Prices of old crop honey have weakened in the West with the rapid approach of 1936 crop honey.

Monthly Report of Honey Producers

Early in April we sent the following questions to honey producers: 1. What is your estimate, revised to date, of the amount of last year's honey crop not yet sold in your locality? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. What is the condition of the honey plants at this time in your locality, as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. 8. What is the per cent of winter and spring loss to date (if any) in your locality? The answers returned are tabulated as follows:

State. Reporter.	Pct. hold-over.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	To retailers. Ex.	To retailers. Comb.	Move-ment.	Cond. honey	Cond. plants.	Pct. of colo.	Pct. wint. loss.
SC-Ala. (J. M. Cutts)	0			.55		.65		Fair	100	120		½
S-Ala. (J. C. Dickman	10			.40		.55		Fair	80	75		25
B. C. (A. W. Finlay)		.10½		.70		.85		Rapid	80	85		18
S-Calif. (L. L. Andrews)	3	.05¼				.57		Fair	60	75		10
SE-Colo. (O. E. Adcock)	5			.45	3.00	.55	.15	Slow	80	75		15
E-Conn. (A. Latham)	10			.75	4.50	1.00	.27	Fair	100	100		2
C-Conn. (A. W. Yates)	0			.70	5.00	1.00	.30	Fair	100	85		5
S-Fla. (C. C. Cook)	0	.06		.40		.55		Fair	100	100		8
C-Fla. (H. Hewitt)	0			.50		.65		Fair	100	100		8
SE-Ga. (J. J. Wilder)	0			.50		.65		Good	100	100		2
E-Ida. (R. R. Isbell)	5	.06¼		.42		.45	.18	Slow	100	90		8
NC-Ind. (T. C. Johnson)	10			.50	3.00	.60	.18	Fair	100	60		25
NW-Ind. (E. S. Miller)	5	.07½		.48	3.00	.60	.15	Fair	100	75		40
W-Iowa. (E. G. Brown)	0					.65		Fair	100	100		30
NE-Kans. (J. F. Garner)	0			.50	3.50	.65	.20	Fair	100	50		25
N-Me. (O. B. Griffin)	3				4.25		.30	Slow	100	90		
C-Md. (S. G. Crocker)	8			.60	4.00	.75	.25	Slow	95	75		25
N-Mich. (I. D. Bartlett)	0					.65	.20	Slow	100	90		15
C-Mich. (E. D. Townsend)	0								100	95		10
E-Minn. (F. W. Ray)	0	.07		.48		.59		Fair	100	90		18
W-Minn. (B. L. Morehouse)	0	.07		.50		.65		Fair	75	80		5
W-Nev. (Mrs. E. G. Norton)	0							Fair	80	90		
W-Nev. (G. G. Schweis)						.42	.15		100	100		2
W-N. Y. (Adams & Myers)	0					.60	.20	Fair	100			
NW-N. Y. (G. B. Howe)						.65		Fair	100			6
C-N. Y. (F. W. Lesser)	2	.07¾		.52		.60		Fair	100	85		15
NW-N.C. (C. S. Baumgarner)	0			.75		.90	.25	Slow	100	100		10
SE-N. C. (W. J. Martin)		.06½		.70		.85	.20	Fair	100	90		10
W-Ohio. (F. Leininger)	0					.75		Rapid	125	80		
N-Ohio. (J. F. Moore)				.50	3.00	.75	.18	Fair	100	80		20
NC-Okla. (C. F. Stiles)	0			.45	3.50	.65	.18	Fair	60	70		12
C-Okla. (C. A. Baltzley)	0	.06½	2.25	.45	3.75	.61	.19	Slow	75	65		35
W-Ore. (H. A. Scullen)	5			.40		.55		Rapid	100	90		5
C-Pa. (H. Beaver)	2			.50		.60		Slow	90	80		10
SE-Pa. (D. C. Gilham)	10			.70	4.00	1.00	.25	Fair	100	80		40
SE-Pa. (H. B. Kirk)				.68	3.50	.90	.25	Fair	100	75		20
W-S. C. (E. S. Prevost)				.69		.82		Fair	80	80		10
NE-S. D. (L. A. Syverud)	0			.43	3.50	.49	.17	Slow	90			15
C-Tenn. (J. M. Buchanan)	0					.75	.20	Slow	90	90		2
E-Tenn. (W. L. Walling)	0					1.00		Slow	100	90		5
C-Texas. (T. A. Bowden)	2			.45		.55		Fair	75	100		3
S-Texas. (J. N. Mayes)	5	.06		.30		.40		Fair		100		5
S-Texas. (H. B. Parks)	10	.04		.38		.45		Fair	90	90		3
W-Vt. (P. Crane)	0				3.75		.25	Fair	95	90		4
S-Va. (T. C. Asher)	2			.50	3.00	.70	.18	Slow	95	95		4
C-Wash. (G. W. B. Saxton)	10			.43		.50		Fair	100	90		4
N-W. Va. (W. C. Griffith)	50					.55	.10	Slow	125	50		50

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Package Bees Queens

The 1936 bee shipping season is on with a rush. Economic conditions have improved. Honey prospects are bright, prices promise to be stronger.

Better fill all those empty hives with packages. We will do our part by furnishing you full weight packages of young bees, headed with a vigorous queen. Send in your order at once.

■

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	To June 1.	After June 1.
Two-pound pkgs. with queens	$2.45	$1.95
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Untested Italian queens	.75	.50

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For queenless packages deduct price of queen.

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Our Style 15-4 Extractor shown here has 4 Removable Reversible Baskets for Standard 9⅛" frames, that can be lifted up and out to clean or disinfect in boiling water. The gears are always in mesh, with ratchet crank and brake, and is the easiest to turn of any 4-basket extractor on the market.

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This is only one of 10 different styles ranging from 2 to 50 frame sizes. Send for printed matter.

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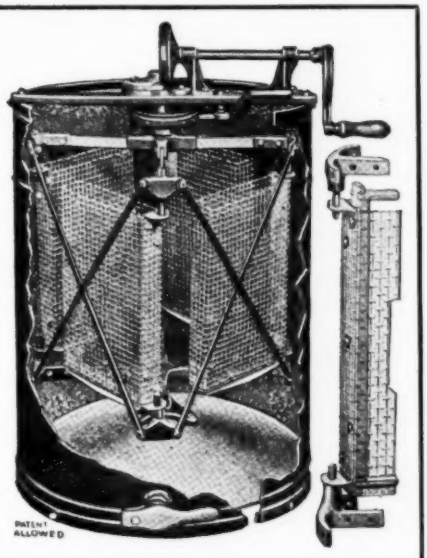

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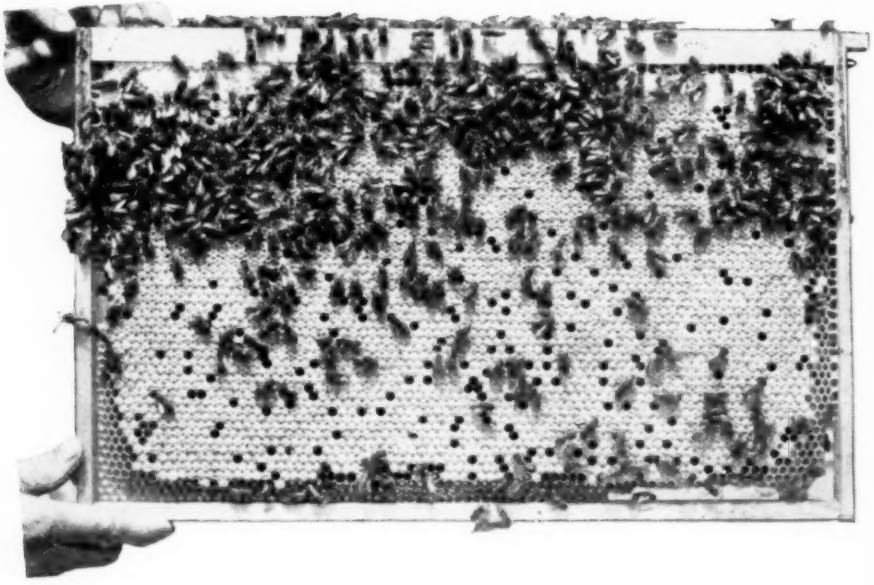

WHAT?--*No Drones!*

Over eight thousand cells of brood on the two sides of this comb—and not a drone in sight! With approximately 3500 bees to the pound (U. S. D. A. figures) about two and a third pounds of bees will soon walk out of each comb like this, to grow into husky field workers.

Watch the scale colony bear down in the days of heavy flow with such a force behind it. Your back will sag a bit under the loads of solid supers. But what of it? In the end it means more full cans and fuller pocketbooks.

Dadant's Crimp-wired Foundation makes just such combs. Worker cells from top bar to bottom bar, from side bar to side bar. What more can foundation do for you?

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Dadant & Sons, Hamilton, Illinois

DADANT'S FOUNDATION

CHOICE OF EXPERT BEEKEEPERS

Vol. 64
No. 5

Gleanings in Bee Culture

May
1936

Rearing Good Queens

JAMES W. BAIN

Double Duty Hive, Designed and Used for Rearing Queens and Producing Honey

[The writer of this article, Mr. James W. Bain, Marion, Ohio, has had many years' experience in rearing queens and producing honey. He designed this hive and has used it successfully for a number of years. At one time Mr. Bain was employed in the queen rearing apiaries of The A. I. Root Company, at Medina.]

Much has been written on such topics as honey production, apiary management, preparation of honey for the market, roadside stands, package bees, etc. One of the most important and essential factors in beekeeping is the production of better queens and better stock. A beekeeper equipped with all modern appliances, yet having colonies headed with poorly reared queens, can not succeed. The handicap of tolerating poor queens (and I am speaking from over forty years' experience in the bee yard), offsets every other advantage at the apiarist's command.

Some beekeepers permit queens of all ages to remain in colonies. Honey production records of colonies with old wornout queens compared with records of colonies headed with good young queens show that it is a waste of time and effort to tolerate queens of inferior quality. Colonies with good young vigorous queens are sure to make a good showing, provided the season is favorable for producing honey and provided the bees have ample combs or storage space at all times. Colonies without sufficient storage room at the right time will swarm. With young vigorous queens, ample storage room given at the right time, and proper manipulation of colonies,

Double Duty hive equipped with frames and queen-cell bars.

swarming is reduced to the minimum. Having just such conditions in our apiary we have not had a single swarm in the last three years. At the close of the season we have every colony, except our special breeding stock, headed with a select tested queen of the current season's rearing.

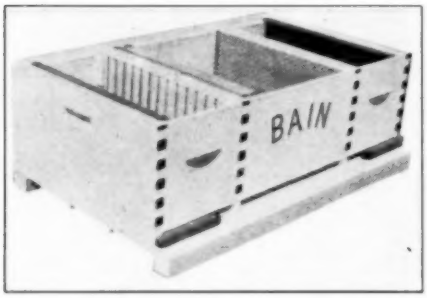
The illustration shows our Double Duty queen rearing hive used for the production of honey as well as for queen rearing. Lack of space forbids mentioning but a few of its outstanding features.

In presenting this hive to the beekeeping world, we believe it to be the greatest labor-saving hive for queen rearing ever given to the public. In fact, we believe it to be as much of an improvement for queen rearing as the movable-comb hive was an improvement over the box hive, for honey production. This hive with a capacity of fifteen to eighteen cells every three days, produces more and better queens than other hives and with a minimum amount of labor. It eliminates practically all heavy lifting and the endless

number of manipulations usually employed in present day queen rearing, and should be a valuable asset to any modern apiary.

Double Duty Hive in Action

First, we transfer to the central ten-frame compartment of the hive a strong ten-frame colony with a young queen. Over this we place a regular ten-frame shallow extracting super with all drawn combs well stocked with bees and some brood as well. Above this super we place a queen excluder and above the excluder



Double duty hive showing three compartments and perpendicular queen excluders.

a ten-frame body containing nine empty frames of drawn combs, preferably combs that have been previously used in the brood chamber. This arrangement is to take care of all incoming nectar and must not at any time be allowed to become overcrowded with honey. More supers may be added as needed so as to avoid as much as possible the storing of nectar in the shallow extracting super immediately below the queen excluder. The queen must at all times be confined to this super and the ten-frame brood chamber below the excluder. This is very important.

Secondly, we stock the two outside or cell-building compartments by placing four frames of brood in all stages of development together with all adhering bees in each side next to the central ten-frame compartment. Now reduce the entrances to the two-cell building units down to ⅞", leaving the entrances next to the central 10-frame compartment. Don't neglect this. These cell-building units are separated from the main or ten frame compartment by partitions made slatted on one side and queen-excluding zinc on the other side, allowing a bee space between the slats and the queen-excluding zinc, thereby making communication as free as possible between the different compartments.

In constructing the perpendicular partitions we saw the slats ⅜"x⅞", retaining a space between the zinc and the slats of about ⅜" in all, making a partition about ⅞". This keeps the combs next to the partitions a normal thickness. Bear in mind that each partition has only one excluding zinc, and each is placed on the inside next to the 10-frame compartment. By placing them there they are less liable to be damaged in manipulating the hive. This places the two slatted sides next to the cell building units, thereby protecting the zinc from the many manipulations the cell building units are subject to.

After the second day the entrances to the cell-building units may be increased if necessary, for the comfort of the bees, but not unless they show indications of being too warm. In the evening of the sec-

The Double Duty hive equipped with Mason jar feeder above the queen rearing compartments.

ond day fill the feeders with syrup and place a feeder on each side of the cell-building compartments. We use ordinary glass Mason jars holding one-half gallon each. By using glass one can always ascertain at a glance the amount of syrup in the feeders.

No holes in the feeder can cap should be made closer to the outside of the cap than ¼ inch; if closer the syrup will sometimes bridge across to the wood collar supporting the feed can, or, if too low may contact with the frames below, causing the syrup to siphon out.

Construction and Use of Grafting Box

We are now ready for cell building. We construct a box made of very light lum-

ber to accommodate five frames, allowing one-half inch between each frame and sides, with screened bottom and cover, allowing ample ventilation. On the third day after the establishment of the cell-building colony, about eleven o'clock a. m. we stock this grafting box with four brood combs well covered with bees and containing open honey, fresh pollen and no unsealed brood. It is permissible, and sometimes an advantage, to have sealed brood in the two center frames. Place the frames in the box, leaving sufficient space

Right, James W. Bain; left, Mel Pritchard, taken in Mr. Bain's apiary.

in the center to receive the frame of grafted cells. The box now well stocked with bees should be placed in a moderately cool, well ventilated room out of the sun, away from outside bees and draft.

Grafting Cells

About 2 p. m., we are ready to make the graft. In makng the graft, we never use royal jelly for priming the cell cups. We prefer to make a dry graft. Experience has taught us that in using primed cell cups we are in a measure coaxing the bees to accept cells that may not be altogether satisfactory to the bees. When the bees reluctantly accept grafted cells, under such conditions, fewer cells will be accepted, and they will not be properly nourished. Queens from such cells will be disappointing and will usually be superseded quite young. With the dry cell plan we have the assurance that the graft will be a success or a failure, there being no compromise.

With a little practice the apiarist soon acquaints himself with the necessary requirements, making his cell grafting operations very simple. I will mention four of the very essential requirements. Observe these and the rest you will soon acquire. First, use well nourished larvae as near one day old as you can secure; second, stock your grafting box with young bees taken from the hive, preferably from the super or upper story; third, have grafting box well stocked with bees but not crowded; fourth, give grafting box ample ventilation. Place in a well ventilated room.

From one to two bars of fifteen to eighteen cells each, or more, if desired, can be given, the number depending on the age, quantity of bees, season of the year and experience of the apiarist. Immediately after grafting the cells, place them in the box, leaving them there until late in the evening; then carry the box to the cell-building colony, remove the feeder and cover from one of the cell-building units, draw the first three frames back to admit the frame of accepted cells, lift feeder with all adhering bees, replace cover and fill feeder with syrup. Keep the feeders filled all the time there are open cells to feed. Return the remaining bees in the grafting box to the hive from which they were taken.

Three days later arrange to supply the other cell-building unit with a bar of accepted cells the same as given to unit No. 1. Then in three more days unit No. 1 will be ready for its second bar of cells; and so on, giving one or the other side a bar of accepted cells every three days.

Care must be taken to keep the cell-building units supplied with combs well stocked with some brood in all stages of development. In supplying the second bar of cells to either compartment, it will be necessary to remove another frame of brood to make room for the second cell bar frame. Always keep a frame of brood between the cell-bar frames. When the cells are nine days old, they must be removed and given to queen-mating nuclei, or placed in nursery cages for hatching. We usually place the caged cells in the upper super for hatching between two frames well filled with brood.

Marion, Ohio.

XUM

Importance of Good Combs

EDWIN J. ANDERSON
Extension Specialist, State College, Pennsylvania.

It Is False Economy to Tolerate Combs of Inferior Quality

There is probably no part of the hive which means as much to the colony strength and which is as badly neglected as are the brood combs. A hive full of perfect combs of worker brood is the exception rather than the rule. This is true in many apiaries, some of which are the the apiaries of our better beekeepers.

When a colony of bees is transferred from a box or crosscomb hive to a modern movable frame hive it is seldom that more than the equivalent of four full frames of worker brood can be salvaged from the combs in the box. When bees are left to build combs as they wish the area of the worker brood combs is often surprisingly small. This is probably one of the principal reasons why these hives ordinarily produce but a small surplus of honey. Four frames of worker brood are certainly a small amount as compared to the two brood chambers of ten frames each, which are recommended and used by many beekeepers.

When the brood chambers of most hives are examined many defective combs are found to be present. Some of the combs contain large areas of drone cells, others show an inch or two of stretched cells along the top bar and still others are damaged because of imperfect wiring or numerous other causes. During the winter months many combs are covered with mold or are damaged with the refuse left from dysentery. If a colony dies during winter and some of the combs are covered with dead bees, as they often are, the combs soon mold unless the dead bees are removed and the hive placed in a dry room. Combs covered with dead bees, mold, or other foreign material deteriorate rapidly so they are no longer ideal for brood rearing purposes.

It is indeed marvelous how bees can clean and repair combs that have been damaged during winter. Repaired combs, however, are never as good as they were before the repair work became necessary. The bees will often tear down an entire set of brood combs and then rebuild the cells. This cleaning and repairing of combs requires considerable labor on the part of the bees and retards the development of the colony in proportion to the amount of the original damage.

Mice enter many hives during winter and eat large holes in the combs. The areas destroyed are refilled with combs during the next season, but the combs built as replacements are always drone combs. These drone combs will have to be replaced later or the beekeeper will suffer a continuous loss because of the overabundance of drones.

Bees will often ruin good combs during the active season in their efforts to rear more drones. They may tear down worker cells and in their place build drone cells, or, they may build drone cells on one or both sides of a sheet of foundation. Damage of this type is unavoidable but must be remedied if the brood chamber is to be kept in the proper condition.

Loss from Poorly Wired Foundation

Another type of damage is the result of improperly wired foundation. When the wires are not properly imbedded the foundation may swing away from the wires and cause the bees to build a defective comb. The foundation may fall entirely free of the frame, leaving a bad mess in the hive. If frames of foundation are placed in the hive during a dearth of nectar the bees will often chew out the wires and ruin the foundation so that imperfect combs are built later. There are indeed many types of damage done to the brood combs.

When a good queen is given two brood chambers for egg laying she will probably have a sufficient number of worker cells for maximum egg laying so that a few defective combs will not prove a serious handicap. When on the other hand the queen is confined to a single hive body during the early brood rearing season, it is important that all the combs be of the best, otherwise the strength of the colony will be reduced in proportion to the area of imperfect comb.

If a single-story hive contains all or nearly all perfect worker brood combs, the bees will be able to develop a strong colony capable of gathering a large surplus

Combs: Bad, Indifferent and Good

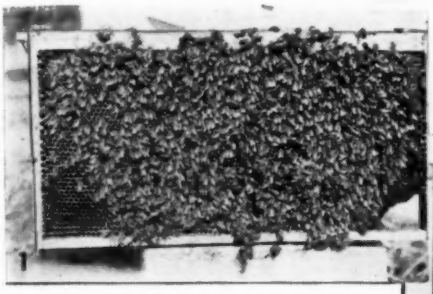


Fig. 1.—Dead bees cover the comb which would soon mold so as to become practically worthless.

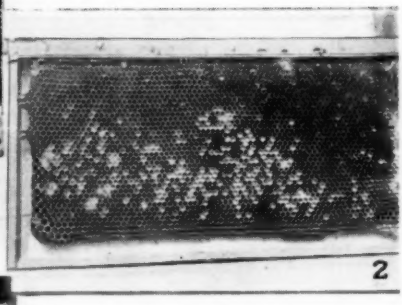


Fig. 2.—A valuable comb beginning to mold.

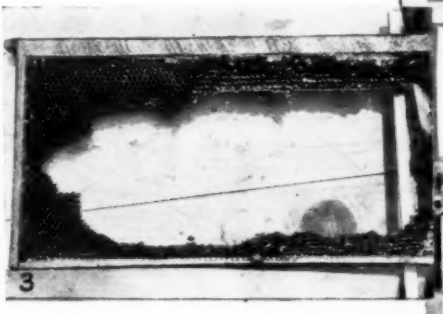


Fig. 3.—A comb ruined by the mice.

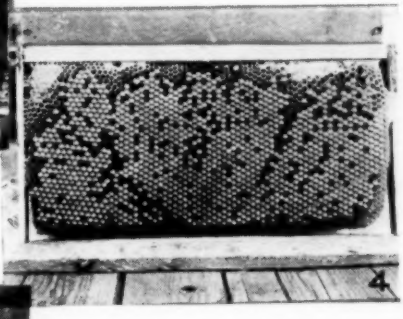


Fig. 4.—A frame without foundation was placed in the hive and bees filled it 100 per cent with drone comb.

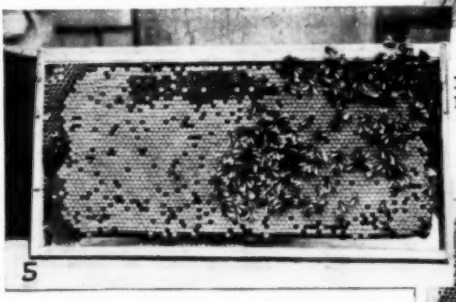


Fig. 5.—A perfect comb of worker brood.

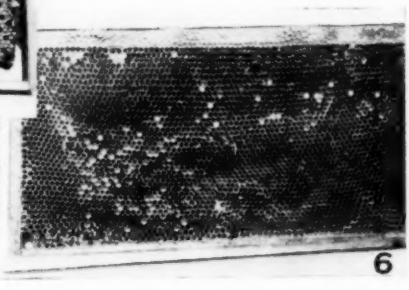


Fig. 6.—Comb that was poorly wired and stretched.

of honey. The possibilities of the colony in this respect can be better understood by estimating the number of worker cells in a hive. In a single comb there are approximately 112 square inches of space on either side of the comb, and there are 27 cells to the square inch. This makes a total of 6048, or roughly, 6000 cells to the comb. In a ten-frame hive there would be 60,000 cells. Allowing one-fourth of the space for pollen and honey there would still be 45,000 cells for brood rearing. This space will permit the queen to lay at the rate of 2100 eggs a day, so that 88,200 bees would emerge during a period of six weeks. It is doubtful whether many colonies become much stronger since this represents nearly eighteen pounds of bees.

If a queen is confined to a single story hive, additional comb space—a shallow or full-depth super of empty drawn combs—must be provided early in the season so that the honey from the early blossoms may be placed above in the super, and not below in the brood chamber where it will occupy the space that should be used for brood rearing.

Drone or Stretched Cells Encourage Swarming

Defective combs, especially those containing drone cells or stretched cells, encourage swarming. Large areas of drone combs will permit the bees to raise an over-abundance of drones. The drones require food both and after they emerge from the cells. They reduce the surplus honey crop by reason of the honey they consume. The drone cells also take space that should be used for rearing worker bees. Combs containing large areas of drone cells should be replaced with full sheets of foundation. A queen will seldom lay eggs in stretched cells and so these cells are used for honey storage instead of brood. The presence of honey in the stretched cells of the brood chamber encourages swarming since it restricts egg-laying and causes the brood chamber to become honey bound. The presence of stretched cells is attributed to the use of the ordinary grades of foundation which permit the cells in the upper two inches of the comb to stretch. The use of the better grades of foundation or foundation containing either hard wax or vertical wires will prevent the combs from stretching. Observations in the field appear to substantiate the claims for these types of foundation. There are some who object to either of these types of foundation. For these beekeepers there are several ways of wiring frames which will help to prevent stretching along the top-bar. Discussions of these methods are given in the bee journals; the writer does not wish to discuss their relative merits or the merits of the different types of foundation but wishes only to urge that some method be used to prevent the cells from stretching.

Don't Tolerate Poor Combs

Defective combs should not be tolerated in the hive, but should be removed and replaced with full sheets of foundation, the foundation to be of a type which will not stretch. The combs that are removed can be extracted and rendered into beeswax. The beeswax may be sold or made into comb foundation.

Beekeepers should practice replacing one or two of the combs in each hive each year. Combs showing the most serious defects should be selected for removal. If these contain some worker brood, they may be placed next to the side of the hive until the brood emerges and then removed. This practice of replacing combs with foundation gives very good results and keeps the combs of the brood chamber in excellent shape and unless some accident occurs the bees should be able to develop excellent colonies even in a single-story ten-frame brood chamber. The sheets of foundation should be placed in the center of the brood chamber as soon as the colony has become strong in spring. There should be at least a light honey flow at the time the full sheets of foundation are given.

If defective combs are kept in the bee yard and used in extracting supers only, they often get into brood chambers and cause the beekeeper some loss. It should be the aim of all beekeepers to keep combs as nearly perfect as possible, then they can be used freely either in supers or brood chambers.

State College, Pennsylvania.

[Mr. Anderson has touched on one of the most important requirements in apiary management. Without good straight combs consisting mainly of worker cells, beekeepers can not hope to secure maximum crops of honey. What a joy it would be to have genuinely good combs in both brood chambers and supers. Such combs are invaluable.—Editor.]

A Model Bee Shipper

E. R. ROOT

A Picture Story of How Packages and Queens Are Produced and Shipped

How often I have wished for a reading machine that would devour books, magazines, and papers in a jiffy. How often I have longed for a think machine that would hold all the facts gathered by the other machine and then by the push of a button or dropping of a coin in a slot flash them back in an instant of time.

If you are like me, dear reader, you haven't the time, strength, nor nerve force to dig through a mass of words,

Fig. 1.—One of Whitman Coffey's queen-mating yards, consisting of ten-frame Langstroth hives, each having three compartments of three frames each, with an entrance on one end and on two sides. This yard, located among the mesquite trees and the cacti shown in Figs. 2, 3, and 5, contains 600 nuclei. Another yard contains 300. Fig. 2 is a close-up of Fig. 1, with the ever-present cacti. Figs. 3 and 4 show close-ups of the cacti with their everlasting prickers. The prickers of these cacti are painful but will fester out if they can't be extracted otherwise. One who has to go out on unimproved land where the mesquite (which also have prickers), cacti and rattlesnakes abound, must wear heavy shoes and leather leggings, as shown in Figs. 4 and 6. Fig. 4, Mr. Whitman Coffey, shown with the style of three-pound package cage which he uses with solid ends. See Fig. 13.

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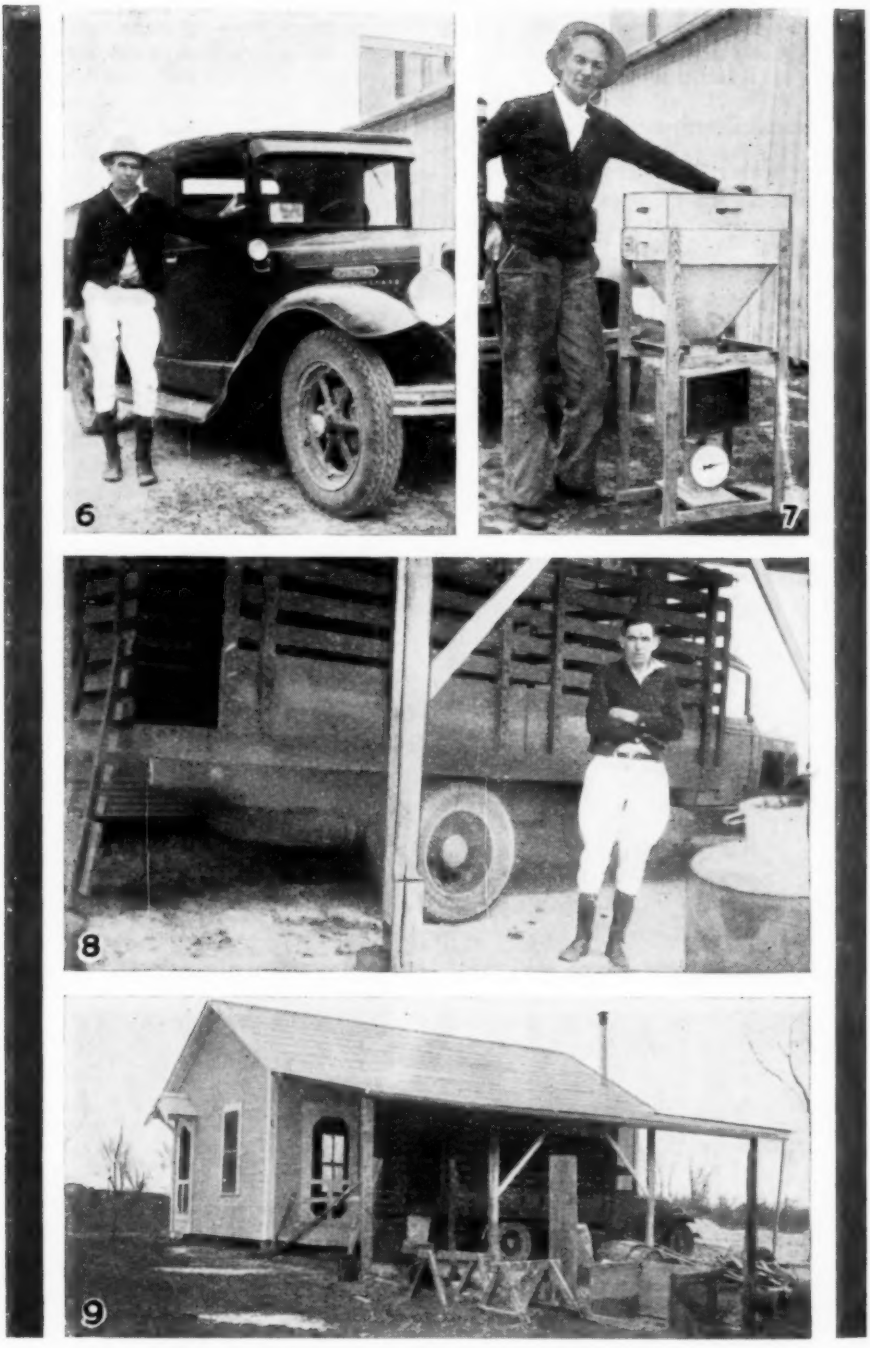

Fig. 6 and 8—Mr. Coffey uses both a light and heavy truck for his work with 1500 colonies and 900 nuclei. Instead of sending by rail, he delivers package bees direct in his large truck shown in Fig. 8. Fig. 7 shows a device for filling cages with package bees. C. S. Miller, of the Miller Bros., of Manzanola, Colo., the designer, stands beside it. Its construction is apparent. It is the best cage filling outfit we have seen. Fig. 9 shows the shop where Mr. Coffey bottles his honey.

Fig. 10 (below) shows how populous with bees are Mr. Coffey's cell-building colonies. Note a cell building frame in front which he had just removed from the center of the colony.

Fig. 11 (above) is a cell building colony which Mr. Coffey was preparing. The hive, he said, must be full of bees for cell building and full of pap.

words, and yet more words, that will in the end give you only an imperfect impression of what you want to know.

Fortunately the radio and the movie have come to our rescue. For a few cents we can scoot around the world in less than an hour, see any city, town or jungle in it, and not only that, but can listen to the world's leaders as if they were in our own homes.

I can't, of course, use here either the radio or the movie, but I can come the next thing to it by letting you peep through my camera, which in 14 snapshots, will tell you a long story in just a few minutes of your time. It is about a man, or men, named Coffey. H. E. Coffey is connected with large honey production in the Hawaiian Islands. See May issue of Gleanings of last year. However, the men, whom I wish to introduce to you now are Whitman Coffey and his brother, Albert, who operate 1500 colonies, 900 queen mating nuclei, produce 30,000 pounds of honey and bottle it in their own plant in the little town or cross roads of Whitsett, Texas, about 60 miles from San Antonio. Whitman is the big boss, and owner of the outfit, but they tell me that the younger brother, Albert, is a bright, young chap who will be known as one of the good Coffeys (for you know there is good and bad coffee).

I don't need to use many words to tell about these Coffeys because the camera has done it better. It is only necessary to say that Whitman Coffey is a man of few words, but you will see from the pictures that he is one man who uses his head as well as his hands. He plans ahead by getting ready for the next season during that time of the year in Texas when the bees are building up. You will note that he has the best of equipment as shown by his trucks, his workshop, his hives, all factory cut, and the big piles of cages all ready for the season when it opens up.

He is fortunate in having two men in

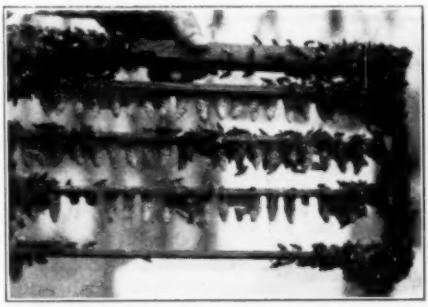

Fig. 12 shows the frame of cells, some sixty in all, from which he had just brushed the bees. There were only three cups which the bees did not accept. This is pretty good for March 10, even in Texas as cold as it has been.

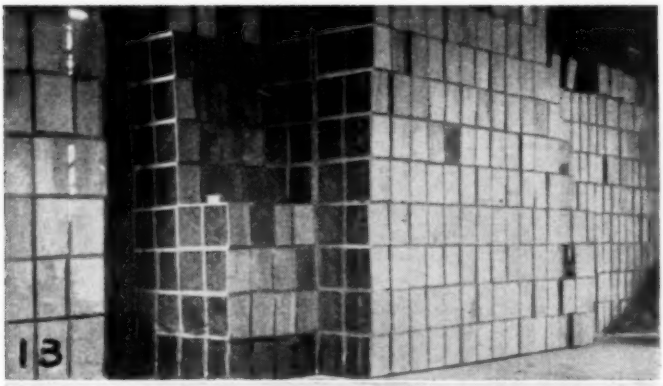

Fig. 13.—In one of Mr. Coffey's buildings he has his bee shipping cages all nailed up and prepared for his bee shipping season. This does not show all of them because he has more elsewhere.

Fig. 14. — Some of the equipment, showing Mr. Coffey standing in the foreground holding one of his nice three-ply combs. These are stored in tight hive bodies, ready for the rush of the season. Mr. Coffey succeeds in his business because he is forehanded. When he can't work his bees he prepares his equipment which is all factory cut and the very best. He has just as much more inside the building.

the persons of the Miller brothers, well known beekeepers of Colorado. The cage filling machine is a sample of the genius of C. S. Miller, who can handle a soldering iron as well as carpenter tools.

San Antonio, Texas.

AMERICAN HONEY PRODUCERS' LEAGUE BULLETIN BOARD.

The American Honey Producers' League is comparable to a popular young lady whose time and attentions are vied for long in advance of the occasion—meaning that the organization should be flattered by the large number of inquiries and bids which have been made regarding the 1937 convention. Among those seeking information as to next year's convention are: Lynchburg, Virginia; Tampa, Florida; Toronto, Canada; Washington, D. C.; New York City; Cleveland, Ohio; Chicago, Illinois; Hemphis, Tennessee; French Lick, Indiana; Honolulu, Hawaii; California; and Philadelphia, Pa.

It would seem inadvisable to commit a national convention to a state whose beekeepers' associations are not sufficiently interested or active in the welfare of the industry to affiliate with the national organization. Only five state association affiliations are paid up at this time; these are Alabama, Louisiana, Minnesota, Oregon, Texas.

Following are the states whose affiliations have expired (with date of expiration): California, August, 1933; Colorado, February, 1932; Empire State (N. Y.), December, 1935; Illinois, December, 1933; Iowa, February, 1932; Lorain County, Ohio, June, 1933; Michigan, April, 1931; Missouri, January, 1931; Montana, December, 1930; Nevada Apiary Commission, January, 1936; New Jersey, February, 1932; North Carolina, April, 1932; North Dakota, January, 1932; Ohio, February, 1934; Ontario, February, 1932; Ontario Co-op., April, 1933; Saskatchewan, November, 1932; Utah, February, 1931; Vermont, January, 1931; Wisconsin, February, 1936; Wyoming, December, 1933.

(Continued on page 305.)

Dysentery in Honeybees*

ERWIN C. ALFONSUS, PH. D.

This Is a Common Disorder Which Often Causes Heavy Winter Losses

*Published with the permission of the Director of the Wisconsin Agricultural Experiment Station

The normal defecation of honeybees takes place during flight. The feces are held in the rectal sac during confinement. The steadily increasing fecal accumulations enlarge the expansible rectum greatly. This expansion—externally visible by a swollen abdomen (Fig. 1) causes disturbance of the bee colony, evidenced by increased movements of the wintering bees and a "distress hum." This accumulation of feces in the rectal sac is carried to a point when bees are no longer able to withhold defecation. At first a few bees will leave the cluster, crawl to the entrance, and discharge their feces on the floor board or the front board of the hive. Brown spots and streaks on these places (Fig. 2) indicate the presence of dysentery.

Advancing fecal accumulations finally bring the entire colony to a point when a general defecation takes place inside the hive to such an extent that the floor board is sometimes literally covered with a layer of the soft excrement. Bee colonies soon perish unless enabled to take a thorough cleansing flight. Combs, as well as the bees, become badly soiled during the general defecation, and a very distinct unpleasant odor becomes noticeable. Dead bees pile up around the entrance on the hive bottom, underneath the winter cluster. Sometimes a few handfuls of bees survive in such colonies until spring, but they appear dull, and the luster of their chitin disappears; they become sluggish and unable to fly, and die within a short period.

The literature on dysentery is enormous and begins with the Roman scribes. The causes of this disorder, as cited in research papers, theoretical discussions, popular articles, and bee books, vary a great deal. Weippl, an Austrian beekeeper, compiled a booklet* on dysentery literature offering fifteen reasons for dysentery occurrences by presenting any possible irregularity in a wintering apiary as a cause.

Fig. 1.—Upper bee, dysenteric. Lower bee, healthy. Note the soiled wing on the dysenteric bee.

In recent years pollen and dextrin were frequently held responsible for causing dysentery. Wilson and Roe**, however, have shown that both substances do not produce dysentery when consumed by wintering bees. That dextrin as a bee food is not only harmless, but equal to cane sugar in food value, was demonstrated by Lothmar***.

Based on literature, testimony and on numerous and repeated observations, it was considered safe to conclude that the cause of dysentery had to be looked for primarily in the winter stores of dysenteric colonies. Any substance in the stores not digested by bees could cause dysentery by accumulating in the rectal sac. By quantitative analysis of the stores and

*Weippl, Th. 1921. Die Ruhr der Bienen. Bibliothek des Bienenwirtes IX. Berlin, 30 p.

**Wilson, H. F., and Roe, C. W., 1929. Relation of Pollen to Dysentery. Gleanings in Bee Culture LVII:704-706.

***Lothmar, R. 1935. Abbau und Verwertung von Starke und Dextrin durch die Honigbiene. Arch f. Bienenkunde XVI:195-204.

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the fecal residue of dysenteric bees it was thought such a substance in stores and feces as well would be found which could be held responsible for dysentery.

For this reason, in the course of two seasons twenty groups, each consisting of two colonies, were wintered on stores of known composition. These stores were either collected honeys and honey dews, or originated from prepared foods. A number of groups without stores were supplied with special foods during cellar confinement.

During the first winter 11 groups were used, and the feces of bees from each group were analyzed for the following constituents: free acid, mineral matter, nitrogen, sugar (invert sugar plus sucrose), dextrin and water. The amount of feces was also determined in each group. In dysenteric groups the feces amounted to 33.9 per cent to 39.4 per cent of the total body weight of the bees, while in normally wintering groups only 7.3 to 13.8 per cent were found.

The chemical analysis of the feces did not reveal any of the above mentioned substances which quantitatively related to the occurrence of dysentery.

It was found that the dry matter in feces represented only a small fraction of the total, while the greater part consisted of moisture. In healthy colonies the fecal moisture was slightly higher than the fecal solids, the proportions being from 1:2 to 1:3. In dysenteric colonies the great bulk of the feces consisted of moisture, and the proportions of solids to moisture was 1:4 to 1:7.

The excessive fecal accumulations in dysenteric bees is to the greatest extent due to the high dilution of the feces of confined bees. The dry matter in feces of dysenteric bees appeared in such small quantities and increased so slowly that, if it is to be considered a cause of dysentery, it must be a slight one.

The source of this over-abundant fecal moisture remained unknown until the bees were removed from winter quarters. It was noticed during the winter that some colonies, especially the dysenteric ones, rejected honey crystals which collected on the bottom boards. For this reason it was thought that the bees were not feeding on the stores in their original condition, and that only part of these stores was used for feeding purposes and the other part rejected.

When honey crystallizes, the dextrose settles out and contains less moisture than the original honey. Thus, some extra moisture is given to the liquid portion of the honey. The liquid with a higher moisture content is interspersed between the crystals, although the honey may appear as a solid mass of crystals. The bees consume this dilute liquid and the crystals are either thrown out or remain in the cells where the honey was stored.

Two colonies with an abundance of stores at their disposal first suffered from dysentery and then died of starvation. The stores had crystallized and the bees fed on the dilute portion until nothing was left, and unable to utilize the crystals, the bees in these colonies starved to death. Fifteen to twenty pounds of honey crystals were found in the combs and on the bottom board of each hive at the end of the season when each hive was examined. A fraction of such a comb, free of all liquid honey, with only crystals and granules left, is shown in Fig. 3. This amount of

Fig. 2.—Colony suffering from dysentery.

honey in a proper solution would easily have lasted each colony until the start of the new flow.

After removal from winter quarters, part of the remaining stores from each experimental group was centrifuged to separate the liquid from the crystals. The moisture content of the liquid part representing the portion of the stores available for food varied greatly, but distinctly correlated with the degree of dysentery, and also the fecal moisture, in the experimental groups. In stores with a moisture content of 16.4 per cent, 16.4 per cent, and 16.52 per cent, the liquid between the crystals was diluted to 23.62 per cent, 23.05 per cent, and 22.69 per cent.

A normal bee colony wintering on liquid honey with a moisture content of 18 per cent, consumes about 5 kg. of its stores in a four-month period; that means 4100 gr. of sugar and 900 gr. of moisture. Another colony with crystallized stores in which the available food portion contained 23 per cent moisture, had to consume 1224 gr. of moisture or nearly 50 per cent more moisture than the colony wintering on normal stores in order to receive the same amounts of sugar. If 900 gr. of moisture in the food produced a moisture content of 72 per cent in the feces at the end of the winter, 1224 gr. of moisture would correspond to a moisture content of 97.5 per cent. This theoretical figure was 11.5 per cent higher than the highest actual figure derived by measurements in the first season. It must be remembered that this high dilution of stores does not extend over the entire wintering season, for crystallization is a slow process during which the crystals gradually increase in number and size. At the same time the moisture content of the liquid portion increases until the liquid between the crystals has reached the point of highest dilution, and the process of crystallization is complete.

During the second season's experiments nine groups, each consisting of two colonies, were confined to an investigation of the excess moisture in the available winter food in relation to dysentery. Dysentery was produced in colonies fed crystalized stores—even when stores derived from syrup feeding which had been subjected to induced crystallization were fed.

Pure cane sugar, dissolved in 50 and 25 per cent distilled water by weight, fed while confined, caused dysentery.

Two groups wintered on original stores collected in June, but the stores of one of these groups were exposed to low temperatures to cause crystallization before given back to the bees. Both groups suffered from dysentery, but the disorder occurred earlier and was more serious in this group with pre-crystallized honey stores.

A candy diet with only 10 per cent moisture did not produce dysentery. When 7.3 per cent pollen was present in the candy fed to another group, extensive brood rearing took place and the colonies perished in a short time but did not suffer from dysentery.

Water fed in addition to crystallized stores failed as a cure for dysentery, but produced it more severely, contrary to recommendations in literature.

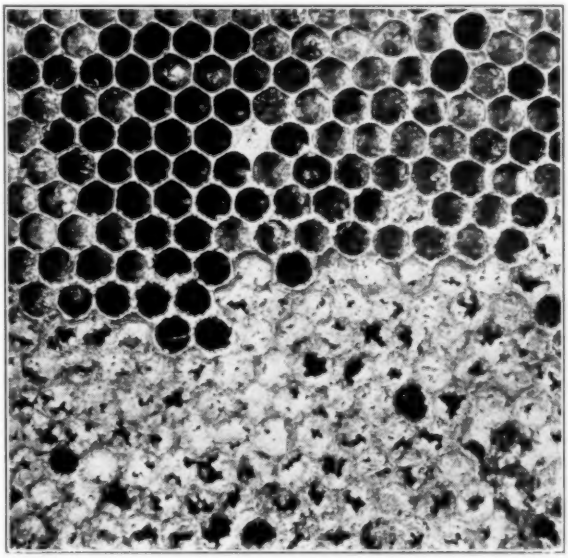

Fig. 3.—Stores with an appearance like the above are frequently found in dysenteric colonies. The liquid honey has been consumed and only crystals and granules are left.

In all groups the relation of dilute food to the occurrence and the degree of dysentery appeared conspicuous.

Quantities of feces as high as 48.6 per cent of the weight of whole bees were measured, and some of the feces contained as high as 86 to 87 per cent moisture.

Great care was taken to determine the amount of fecal accumulation when the first bees started to defecate around the entrance. In all cases this occurred when the feces weight amounted to approximately 33 per cent of the weight of the whole bee. In the great majority of the occurrences when this point was reached the fecal moisture was about 80 per cent.

Defecation mainly inside the hive or a general defecation takes place when the fecal accumulations amount to 45 per cent of the body weight of the bees.

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During the active season bees may consume unripe honey and water in large quantities, but with the exception of a few rainy days they are able to fly and dispose of excess moisture by defecation, as well as by transpiration.

During the inactive season the bees are normally confined to a honey diet containing only 16 to 18 per cent moisture. This quantity of moisture seems to be the ideal amount required for the slow metabolic changes of the honey bee in the winter time. Part of this moisture is probably used in digestive and other processes of the body; some of it is given off by transpiration, but the remainder is kept with other unused material in the rectal sac. The water need of the wintering bee appears to be a very limited one. If the bees are forced to consume more water than needed for their digestive and other processes, or more than they are able to transpire, water must pass into the rectum, gradually causing an over-accumulation which leads to dysentery.

Denisoff* recorded an increase of the relative humidity in a bee cellar from November until April, from 60 to 90 per cent with a noticeable effect upon the bees. Such an increase in the relative humidity during the wintering season probably takes place in most bee cellars.

Woodrow** found that bees fed dilute foods and exposed to the higher ranges of relative humidity, suffered excessive fecal accumulations and discharged their feces which consisted largely of water. This he claimed was caused by their lowered ability to eliminate this water through transpiration.

Dilute foods, feeding in excess, or water consumption at a time when increased relative humidity possibly together with lowered temperatures, hinder or decrease transpiration, and without an opportunity for normal defecation, appear to be the causes of dysentery.

It is not thought that dysentery as in the previous described experiments*** is due only to dilution of the available food supply by crystallization, untimely syrup feeding or feeding water in winter quarters, but other sources of excess water exist and have been recognized by earlier writers to cause dysentery. A. I. Root* cited among other reasons the moisture absorbing, self-diluting, characteristic of stores manufactured from fruit juices, as well as the possibility of condensed moisture dripping from the cover upon the winter cluster, as causes of dysentery. Charles Dadant ** wrote: "When honey is not sealed, it is not only watery, but the quantity of water that it contains is increased by the property that it possesses to absorb moisture. This water accumulates in the intestines of the bees and if they are prevented by cold from voiding it, they become uneasy and perish."

Whenever and wherever dysentery occurs, it is certain that the bees for some reason are forced to consume more moisture than their bodies are able to take care of. Honey dews are dangerous stores, not because they contain dextrin, which is found in almost every sample of honey, but because most of the honey dews crystallize rapidly.

Spotting in or around the hives after rainy periods of the active season is caused either by unripe honey or the absorption of rain water which accidentally entered the hive.

The prevention of the disorder is a difficult task because granulation of stores is an uncontrollable factor. The feeding of sugar syrup in addition to natural stores does not necessarily prevent the disorder, because the syrup might be stored out of reach of the winter cluster, and the colony forced to feed on dysentery-producing stores.

The following procedure serves best for detecting dysentery proclivities as well as prevention of the disorder. In the latter part of September the stores of each colony should be examined for crystallized honey by puncturing the honey cappings with a hive tool. If honey crystals are present in the stores at that time there is danger from dysentery. It is best then to remove about four combs, two from each side of such a colony, and replace with empty combs, setting them in the center of the hive. Sugar syrup is then fed until sufficient stores are present to last until spring. The bees store this syrup primarily in the empty combs

*Denisoff, W. I. 1928. Effect of the Quality of Winter Stores Upon the Results of Wintering of Bees. (Russian) Zhurnal Opuitnaja Paseka 3:367-372.

**Woodrow, A. W. 1935. Some effects of relative humidity on the length and life and food consumption of honey bees. Jr. Econ. Entom. 28:565-568.

***For methods and data see: 1935 Jr. Econ. Entom. 28:568-576.

*Root, A. I. 1883. A B C of Bee Culture. Medina, Ohio. 288 pp.

**Dadant, C. H. 1886. The influence of honey on wintering. Am. Bee Jr. 22:423-424.

in the center, and the stores in such a location are consumed during confinement. A cleansing flight after completed feeding appears very desirable. The crystallized stores on the sides of the hive and the crystallized stores contained in the previously removed combs are not dangerous in spring, after flight activity is reassumed, but represent a great help in brood rearing.

If a colony's stores at the late September examination are found without crystals, bees will winter safely on them even if crystallization takes place during the winter. It generally takes a long time until such stores reach the degree of crystallization at which they may become dangerous. Usually the time for a cleansing flight which removes any danger is close.

Essential for dysentery prevention as well as successful wintering in general are good strong colonies headed by a young queen, also dry but fairly cool and well ventilated winter quarters. Weak colonies often consume too much food and can not preserve the required cluster temperature and this may not permit transpiration of excess water resulting in dysentery. Similar conditions exist in a colony where an old queen dies during the winter and the heat preserving cluster dissolves.

Cool winter quarters according to Corkins and Gilbert* are necessary in order to reduce movements and food consumption of the clustered bees.

Ventilation, of course, carries away abundant humidity and prevents the relative humidity from rising to a dangerous point, except when the outdoor relative humidity is equal or higher than the relative humidity of the winter quarters. This, however, in the North Central States is rarely the case.

Madison, Wisconsin.

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*Corkins, C. L. and Gilbert, C. S. 1932. The metabolism of the honey bee in winter cluster. Bull. 187, Agr. Expt. Sta. Laramie, Wyo. 30 pp.

American Honey Institute Notes

Pro and Con.—Apparently two members studied the proposed change in dates for National Honey Week outlined on pages 6 and 7 of the Annual Report. Both of these producers live in Illinois and one of them endorses the change and promises to reserve sufficient stock from his 1936 harvest to serve his immediate locality during the Spring Honey Week of 1937. The other producer opposes the plan, and states: "We feel that the fall is the proper time to have National Honey Week as anyone putting on any right size of a display would not have enough honey in the spring to do so." Two reactions from a membership of more than a thousand. Surely some of the rest of you have definite thoughts regarding a Spring National Honey Week instead of a fall one. Won't you write us just how you feel? We need to know in order to serve you.

Talk It Up.—Talk up the Third National Honey Cookery Contest, will you please. We want all beekeepers to become acquainted with this program. The rules are given on page 15 of the Annual Report. Within three weeks printed rules and list of prizes will be available. We hope to have five hundred entries at San Antonio in November and if our members will give five of their best honey customers one copy of the rules and list of prizes, we will get that many entries. If you wish extra copies of the rules and list of prizes, write us early. Up to fifty copies will be given free to members.

Ice-Screaming Time.—Now that "ice-screaming" time is well on its way and the children are using their full lung capacity to let you know that their favorite dessert is ice cream, the women readers may welcome this newcomer which was born in the Institute Kitchen not so very long ago. We announced its arrival along with others, in a six-page leaflet which was mailed with the annual report so perhaps you already have it. If not, send us a postcard with your name and the recipe will be sent.

The 1936 Membership.—During the first quarter of 1936, 152 memberships were received. Our records tell us that 44 of these are "brand new," twenty-seven of them were members at one time or another but were not on the 1935 Honor Roll. Eighty-one of the total were on last year's membership list and many of them for years before.

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WHO'S WHO IN APICULTURE

State or Province	Beekeeping Taught in Agr. Colleges	Bees on Combs Admitted.	Net Wt. Law		Inspector State or Province	Secretary State Assn.
			Ext.	Comb.		
Alabama	Yes	No	Yes	Yes	Thos. Atchison, Montgom.	J. M. Robinson, Auburn.
Alberta	Yes	No	Yes	Yes	S. O. Hillerud, Edmonton.	
Arizona			Yes	Yes		
B. C.	No	No	Yes	Yes	A. W. Finlay, New Westm.	A. W. Finlay, New Westm.
Calif.	Yes	Cert.	Yes	*Yes	H. M. Krebs, Sacramento.	C. W. Hartman, Oakland.
Colorado	Yes	Cert.	No	No	R. G. Richmond, Denver.	Hilma Carson, Denver.
Connecticut	Yes	Cert.	Yes	Yes		C. J. Rost, Meriden.
Delaware			Yes	Yes		
Florida	No	Cert.	No	No	R. E. Foster, Gainesville.	M. E. Darby, Zyphrhills.
Georgia	No	Cert.	Yes	No	H. B. Hamlin, Macon	C. P. Smith, Enigma.
Illinois	Yes	No	Yes	*Yes	C. L. Duax, Chicago.	E. F. Peterson.
Indiana	Yes	Cert.	Yes	Yes	J. E. Starkey, Indianap.	J. E. Starkey, Indianap.
Iowa	Yes		No	No	F. B. Paddock, Ames.	F. B. Paddock, Ames.
Kansas	Yes	Cert.	No	No	R. L. Parker, Manhattan.	H. W. Stewart, Highland.
Kentucky	Yes	Cert.	No	No	W. A. Price, Lexington.	W. A. Price, Lexington.
Louisiana	Yes	Permit	Yes	Yes	W. E. Anderson, Baton R.	E. C. Bessonet, Donaldsv.
Maine			No	No		
Manitoba	Yes	No	Yes	Yes	L. T. Floyd, Winnipeg.	L. T. Floyd, Winnipeg.
Maryland			Yes	Yes		
Mass.	Yes	Cert.	Yes	Yes	B. N. Gates, Boston.	Geo. Meigs, Pres., Hath.
Michigan	Yes	Permit	Yes	Yes	D. P. Barrett, Lansing.	R. H. Kelty, East Lans.
Minnesota	Yes	Permit	Yes	Yes	A. G. Ruggles, St. Paul.	B. L. Morehouse, Montevi.
Miss.	Yes	Cert.	No	No	Clay Lyle, State College.	Clay Lyle, State College.
Missouri			No			
Montana			Yes	Yes		
Nebraska	Yes	Cert.	Yes	*Yes	L. M. Gales, Lincoln.	C. A. McGuire, Lincoln.
N. B.	Yes	No	Yes		J. W. Ricketson, Freder.	J. W. Ricketson, Freder.
Nevada	No	No	Yes	Yes	G. G. Schweis, Reno.	
N. H.	Yes		Yes	Yes		
New Jersey	No	Cert.	Yes	Yes	P. L. Holcombe, Lambertv.	E. G. Carr, Pennington.
New Mexico	No		No	No		
New York	Yes	Cert.	Yes	No	A. C. Gould, Albany.	E. T. Cary, Syracuse.
North Caro.			Yes	Yes		
North Dak.	Yes	Permit	Yes	Yes	J. A. Munro, Fargo.	J. A. Munro, Fargo.
Nova Scotia	Yes	No	Yes	No	H. G. Payne, Truro.	E. D. Craig, Kentville.
Ohio	Yes	Cert.	Yes	Yes	C. A. Reese, Columbus.	W. E. Dunham, Columbus.
Okla.			Yes			
Ontario	Yes	No	Yes	No	E. J. Dyce, Guelph.	E. J. Dyce, Guelph.
Oregon	Yes	Cert.	Yes	Yes	W. G. Rodda, Hermiston.	H. A. Scullen, Corvallis.
Pennsyl.	No	Cert.	Yes	Yes	H. B. Kirk, Harrisburg.	A. T. Kiel, Mars.
Quebec	Yes	No	Yes	No	H. J. Plourde, Quebec.	J. Prud'homme, St. Isid.
R. I.	No	Cert.	Yes	Yes	A. E. Stene, Kingston.	O. C. Wyatt, Lakewood.
Sask.	No	No	Yes	Yes	C. Rushton, Rocanville.	Mrs. G. Murray, Saltcoats.
South Caro.	Yes	Yes	Yes	Yes	J. A. Berly, Clemson Col.	
South Dak.	Yes	Cert.	Yes	Yes	J. L. Low, Pierre.	
Tenn.	Yes	Cert.	Yes	Yes	J. Allison, Nashville.	G. M. Bentley, Knoxville.
Texas	Yes	Cert.	Yes	Yes	C. E. Heard, College Sta.	H. B. Parks, San Antonio.
Utah	No		Yes	Yes	W. H. Hendricks, Salt L.	L. Walling, Salt Lake C.
Vermont	No		Yes	Yes	Chas. Mraz, Middlebury.	Chas. Mraz, Middlebury.
Virginia	Yes	Cert.	Yes	Yes	H. W. Weatherford, V. H.	W. H. Caldwell, Gault M.
Wash.	Yes	No	Yes	Yes	W. J. Robinson, Olympia.	M. F. Mommsen, Tacoma.
W. Va.	No	Cert.	Yes	Yes		
Wisconsin	Yes	Cert.	Yes	No	E. L. Chambers, Madison.	H. J. Rahmlow, Madison.
Wyoming			Yes	Yes		

United States—Investigation and Demonstration in Beekeeping, James I. Hambleton, Apiculturist, Bureau of Entomology and Plant Quarantine, Washington, D. C.; Southern States Field Laboratory, W. W. Whitcomb, Baton Rouge, La.; Pacific Coast Laboratory, Frank E. Todd and Geo. H. Vansell, Davis, Calif.; Intermountain Laboratory, A. P. Sturdevant, Laramie, Wyoming.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. P. Gooderham, Dominion Apiarist, Experiment Farm, Ottawa, Canada.

American Honey Producers' League—President, T. W. Burleson, Waxahachie, Texas.

American Honey Institute—President, R. H. Kelty, East Lansing, Michigan.

Southern Beekeeping States Federation—President, George W. Bohne, Luling, La.

Texas Apicultural Research Laboratory—H. B. Parks, R. F. D. No. 1, San Antonio, Texas.

Extension Specialists in Beekeeping—Alabama, W. A. Ruffin, Auburn; Alberta, S. O. Hillerud, Edmonton; California, J. E. Eckert, Davis; Connecticut, L. B. Crandall, Storrs; Florida, R. E. Foster, Gainesville; Iowa, F. B. Paddock, Ames; Kentucky, W. A. Price, Lexington; Louisiana, E. C. Davis, Baton Rouge; Manitoba, L. T. Floyd, Winnipeg; Maryland, George J. Abrams, College Park; Michigan, R. H. Kelty, East Lansing; Nebraska, O. S. Bare, Lincoln; New Brunswick, Ersol Moore, Prince Williams; New Hampshire, C. O. Rawlings; New York, Geo. H. Rea, Ithaca; North Carolina, C. L. Sams, Raleigh; North Dakota, S. Gray-Butcher, Fargo; Nova Scotia, H. G. Payne, Truro; Ohio, W. E. Dunham, Columbus; Ontario, E. J. Dyce and C. E. Martin, Guelph; Oregon, H. A. Scullen, Corvallis; Pennsylvania, E. J. Anderson, State College; Saskatchewan, R. M. Pugh, Regina; South Carolina, E. S. Prevost, Clemson; Texas, R. R. Reppert, College Station; Vermont, Charles Mraz, Middlebury; Virginia, H. W. Weatherford, Vernon Hill; Wisconsin, H. F. Wilson, Madison.

From the Field of Experience

CHAIN STORES SELL HONEY

Both Chain and Independent Stores Help to Popularize Honey

There is a belief more or less common among beekeepers that when they approach a chain store to sell their honey that they are either given scant courtesy or are referred to their buyer in some big city like Chicago or New York. When they write to that individual the price offered is absurdly low or they are "well supplied."

While that was true at one time, the policy in later years has changed.

Mrs. Root and I, without, of course, revealing that we are bee people, have called on the chains in San Antonio and we have found several different local brands, all of them good. There are some out-of-town packed honeys as well, likewise good.

Among the number who pack and distribute their honey to the chain stores, and to the independents as well, is Mr. Henry Grossenbacher, 4715 South Flores Street, San Antonio. He is one of the old-timers. He has been a beekeeper here and a packer of his product for many years. His bees, about 500 colonies, are out of town but his honey is packed in the rear of his home. On the front porch he has a display of his product, the very same which he sells to the chains and the independents.

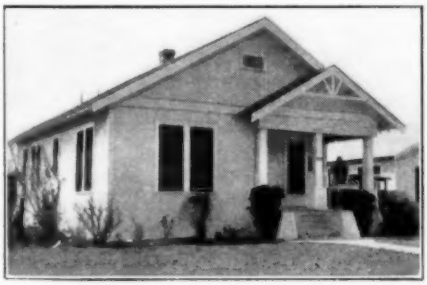

Fig. 1.—The home of Mr. and Mrs. Grossenbacher, which the bees paid for.

Fig. 1 shows the home that the bees paid for and Fig. 2 shows Mr. and Mrs. Grossenbacher by their honey stand. In order to get it out into the light the stand and all were brought down in front of the porch where a picture was taken.

Mr. Grossenbacher, when asked if the seasons were as good as they were years ago when he started, said, "No, not as in the good old days when the mesquite yielded heavily. But I make a living and in good years get fair crops of mesquite, huajilla (pronounced wahéa) and catsclaw."

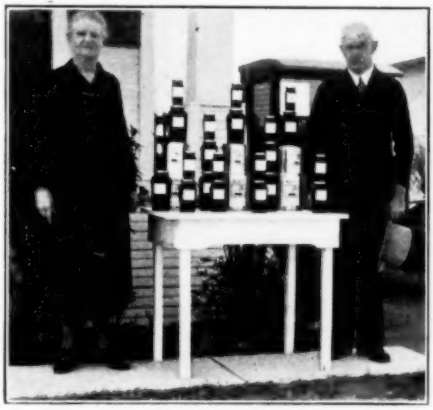

Fig. 2.—Mr. and Mrs. Henry Grossenbacher, of San Antonio, Texas. Mr. Grossenbacher owns 500 colonies, the produce from which he sells to chain stores.

As to chain stores their money was as good as that of the independents with the advantage that one buyer is the only one he has to see for the whole chain of stores.

His policy is to visit occasionally the stores that handle his honey. If any of it starts to granulate he removes it from the shelves and replaces it with new.—E. R. Root, San Antonio, Texas.

WINTER LOSSES UNNECESSARY

The Important Thing Is to Leave Each Colony Plenty of Well Ripened Honey

Lightnin,' in the play by that name, makes the remark, "I drove a swarm of bees across the priarie in the dead of winter and never lost a bee." Not many beekeepers in the northern states are able to go through a winter without the loss of

one or more colonies. Something should be done about it.

Personally, I believe it possible to carry through all our colonies, even though wintered outdoors, if we prepare them right in the fall. For the past eight years we have wintered our colonies outdoors and this is the first year we have lost any. Three colonies out of 63 starved to death (with honey in the hive) and it was our fault. This was the second coldest winter in history here at Madison.

Our bees were wintered in three ways: three without covering at any time, 40 wrapped in tar paper, and 20 packed in individual cases. Two of the dead colonies were in packing cases and one in tar paper. However, the packing had nothing to do with the loss. They died because the honey (and there was plenty of honey left) was not in the correct location for them to get it during the long, cold spell. The temperature dropped to 26 below zero.

I believe that if there is enough honey above the cluster so that they can move up onto it and not run short before warm weather, they will come through regardless of a lot of other factors.

Why do bees naturally store their honey above the brood? In nature, in cold climates, they clustered in the empty cells in the fall and during the winter moved upward to get their food. We know, of course, that the cluster can not move sideways during zero weather.

The three colonies which starved were among the strongest in the yard. One had five frames of dead bees and was the best colony for storing comb honey. In fact, it stored above the brood chamber too well. Although wintered in two bodies the large number of bees required so much food they used up every drop above them. Then during the four weeks of zero weather they couldn't break the cluster and get the honey still in the side combs.

The easiest solution of the problem is the food chamber—either shallow or full-depth. The center four or five frames should be well filled with ripened honey. The stronger the colony, the more honey is needed in the center frames. I have had strong colonies with the frames in the upper body jammed with honey. By spring the center frames were almost empty.

Will fall feeding solve the problem? I'm not so sure. One of our dead colonies was fed with honey rather late last fall. It looks as if they stored it at the sides or below the cluster because there was some unsealed honey there. At any rate, I feel guilty when a colony dies during the winter.—H. J. Rahmlow, Secretary Wisconsin Horticultural Society and Corresponding Secretary of the Wisconsin Beekeepers' Association, and Editor of Wisconsin Beekeeping, Madison, Wisconsin.

HOW ARE BEES POISONED?

Poisoned Pollen and Not Poisoned Nectar May be the Cause

When the subject of poisoning from orchard spray is brought up it is generally assumed that the poison is in the nectar.

John Rahmlow, Madison, Wisconsin, 16-year-old high school boy, shoveling out the entrances of his bees on the first warm day, February 23. All are in two stories, covered with tar paper. All of the 18 colonies in this yard were alive, because they had plenty of good honey above the cluster for their needs during the long cold spell.

I think that this premise is not supported by the facts, but rather that where one bee dies from poisoned nectar, a score or a hundred die from poisoned pollen.

In the first place, in order that the bee obtain poisoned nectar the poison spray would have to get into the nectary of the flower. Not only that, but it would have to become mixed with the nectar, otherwise the bee, even if it sucked the nectar out, would not get any poison. Again, suppose the poison has been forced into the nectary and become mixed with the nectar. Unless the nectar was flowing in abundance it would be so diluted by the poison that the bee would pass on without touching it. And, finally, supposing that the bee did find some nectar that had become mixed with poison and sucked it up, what chance would that bee have of reaching the hive? To be sure, the honey sac is not a stomach. It is more like a mouth in the higher animals. Well, how far would a man travel with his mouth full of arsenate of lead? I will admit that I don't know. But my guess is that a bee with its honey sac full of poisoned nectar would never reach the hive.

Of course, a bee that dies in the field is just as dead as one that dies in front of the hive. But it happens that a characteristic symptom of poisoning is numbers of bees writhing in agony on the alighting-board and in front of the hive. It was Henry Weatherford, bee specialist for the state of Virginia, who first called my attention to this fact. How, he asked, could a bee reach the hive with all that poisoned honey in its sac?

Consider now the theory that poisoning comes through pollen. To begin with, pollen is not produced in the close-mouth nectary. It is out in the open where the spray is sure to reach it. The poison does not have to become mixed, as with nectar. It merely sticks on the surface of the pollen grain. The pollen is not taken internally, it is carried in pollen baskets on the legs of the bee and, therefore, would have no effect on the bee that gathered it, however much poison it contained. That bee would reach the hive safely and the pollen would be removed, and perhaps packed into the cells.

Trouble would start only when the nurse bees began to use this poisoned pollen to make chyle for the brood. A single load of poisoned pollen would poison a great many nurse bees. They would rush out of the hive and die at the entrance in great numbers. Since that is precisely what we have observed them doing when suffering from poison spray, it is convincing proof, I think, that poisoned pollen rather than poisoned nectar, does most of the damage.

The question may be of considerable importance. Serious poisoning occurs generally not during fruit bloom, but during the main honey flow as a result of poison spray falling onto bloom under the trees. The remedy is to have no such bloom in the orchard, or to mow it down before spray is applied. This is practical and effective. I know of many apiaries in and near commercial orchards where no poisoning occurs. Three of my own yards are in such locations. But the only plants that have been recognized as dangerous in the orchard are honey-producing plants. Of course, the layman makes no distinction between honey plants and those from which bees gather only pollen. But if the latter should be overlooked in an orchard during spraying time because the beekeeper knew that such bloom produced no honey, poisoning that resulted might be just as serious as if the bloom had also been yielding nectar.—Walter H. Hull, Vienna, Virginia.

HIVES IN PAIRS

This Arrangement Economizes on Space and Facilitates Manipulation of Colonies

On page 158 of the March, 1935, Gleanings, we read: "Many beekeepers place hives in pairs so that colonies can be operated from the side. Theoretically this sounds feasible. The one objection to this plan is that disease can be transmitted from one colony to the other when hives are too close together."

For many years I have worked my hives in pairs. The suggestion came originally from the writings of the late Dr. Miller, and I think that it was he who first pointed out that by a simple method drifting and mixing in such hives can be absolutely avoided. It is to contract the entrances in spring in such a way that the entrance to the left-hand colony is on the extreme left, and that of the right-hand colony on the extreme right. To the bees this individualizes their home so that it is very improbable that a bee will go to the wrong hive, and in practice if the hives are thus treated in the spring, even though

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they are given full entrances later in the summer they will still do most of the traffic on that side of the bottom board where they started it in the spring. If any drifting or mixing does occur it comes not from bees entering the other hive of the pair, but from their entering the corresponding hive to their own in some other pair, perhaps in the row behind or in front. To guard against this we are careful to avoid too much uniformity in the

The other hive makes a comfortable seat.

rows and we like to have some trees or bushes, or even old boxes, pieces of lumber, or the like, about the apiary so that bees can mark their locations better.

In a reasonably well-managed apiary there should be a constant watch for A. F. B. (Please let's stop using the nasty word "disease.") During the early weeks of the season especially, it is more likely to show up than later, when the new honey is coming in fast. During this period the entrances are, of course, contracted so that the bees go to the right-hand corner, or the left-hand corner of their hives. If A. F. B. is found the colony is destroyed quickly and so that no bees can get out. This procedure effectually stops all danger of trouble spreading through having hives in pairs.

Why all this argument? Simply because there are some genuine advantages in placing hives in pairs. In the first place you can get about 40 per cent more bees into the same space without crowding. That means an immense saving in steps, and where a number of yards are operated for commercial honey-production every step saved counts. Then there is another advantage in manipulation which I have used for the past few years but have not seen described.

When I go through a yard early in the season, before supers are on, I use one hive to sit on while I examine the other. I take a cover off, and lay it on the ground behind the hive, sit on the adjacent hive and so am very comfortably able to lift out the combs and look the colony over. Having done so, I rise, take the cover I have been sitting on and place it on the hive just examined, turn around, sit down again and start to examine the second hive of the pair. When I am through I pick up the cover from the ground and cover the second hive.

This saves a world of effort. I can go through many more colonies in a day by this simple device. I happen to be tall, and found it very fatiguing to stoop all day over hives, or to kneel down and rise up each time, and I never could have patience to carry around a portable seat and then find a level piece of ground in working distance to set it down upon. This way, a broad solid comfortable seat is always at hand.—Hy. W. Sanders, Morris, Manitoba.

[Mr. Sander's plan of having each colony in a pair mark its location by adjusting entrance reducers right and left sounds feasible. How about the young bees that come onto the scene after entrance reducers are removed, during warm weather? Will they travel as their predecessors did or will they use the entire wide entrance?—Editor.]

SWARMS AND STINGS

105 Stings on One Arm at One Time—Too Much

According to general belief, bees are very gentle while swarming, although some experienced beekeepers warn against such a generalization. Last summer I had an opportunity of finding out for myself that such warnings are very much to the point.

As is well known, there was considerable swarming in many localities during last summer. On one of the warm afternoons which followed a cold spell, two swarms issued almost simultaneously in one of our apiaries. I hived one of the swarms without any accident and about half an hour later I was ready to start working with

another one. The latter, about six pounds in weight, was hanging at the end of the branch. However, a small part of the bees were spread along the branch. Since the swarm was not far from the ground, I placed an orchard ladder under the swarm and decided to shake the latter into a large paper box. Since I could not reach the branch with my hand, I used a hooked stick for that purpose. I had on a bee veil but the sleeves of my shirt were rolled up high. When I held the box, preparing to shake the bees, the small part of them which was spread over the branch was just above the arm that was holding the box. When I shook the branch, part of the bees fell on my arms, and I felt that they were not idle. They got me, and how! I shook the swarm, dumped the bees in front of the hive and started to count the reward which the bees gave me for bringing them home. There were 105 stings on the upper surface of one arm (between the wrist and the elbow) and 45 on the other. My heart was pounding vigorously, and my scalp began to itch terribly. My lips became numb and I had the same feeling as if many ants were running over them. The same feeling was in my feet, with the difference that "the ants" were running toward my knees. Then I began to feel dizziness, and to my surprise, I saw that the grass, the leaves, and the sky were turning white. I could not feel my pulse at all. The dizziness progressed until finally I saw only a white indefinite mass before my eyes. Then I fainted. The unconsciousness lasted for only about half a minute, according to the testimony of persons who saw me collapse. Nevertheless, I had to lie on the ground for about ten minutes more, since the dizziness reappeared when I tried to walk. So I continued to lie down and to watch the white leaves and sky gradually assuming their normal colors. Afterwards I tried to work but my left arm, which got 105 stings, was too swollen to allow comfortable movements. The swelling completely disappeared in two days.

I had been immune to bee stings and those which I got in the apiary under normal circumstances had not bothered me at all. Apparently, a simultaneous injection of 150 stings was a little bit too much for my organism to take care of without any stronger reaction. In spite of everything, I am grateful to my bees for giving me such a wonderful experience!—M. H. Haydak, St. Paul, Minn.

COMMENTS ON CURRENT ITEMS

Wm. Hahman of Florida, brings up the old question, "Do old combs result in smaller bees?" Theoretically they should, but years of observation have convinced us that bees raised in combs used for brood rearing for many years are no smaller than bees that are born the first season from combs drawn from foundation. Dr. Merrill's reply to this question ought to settle the matter for all time.

One thing is certain, queens will lay eggs in old combs before they will lay in new combs. But before her majesty will deposit an egg in any old cell it must first be washed, scrubbed and varnished until it glistens. Has any one failed to notice that before the workers will deposit honey in an old brood comb it must be thoroughly cleaned and polished.

Those who continually condemn the use of old combs in the supers do not take into consideration the fact that a good lot of the surplus honey coming in a good flow is first deposited by the honey gatherers in cells of the brood chamber and later removed, usually by the young bees, to the upper stories.

Mr. Houser's way of watering bees is good. A five-gallon keg is all right for a small apiary but a 40-gallon barrel would be better for an out-apiary. The idea of the board, say 3 feet by 3 feet, on the ground is a wise provision to take care of the drip at night. It is really astonishing how much water bees will carry into hives on a warm day. And think of the great loss to the owner of the bees if they are compelled to wear themselves out traveling often a mile or more for water.

Two-story brood chambers are all right for comb honey if both full depth brood chambers are full of brood and boiling over with bees.

Spinster Jane says this is her last year of wintering out of doors and wants information as to the best type of bee cellar. Several years ago there appeared in Gleanings a photo of what is certainly the finest type of bee cellar I have ever seen illustrated. It was constructed entirely of cement and of hopper shape, say, 16 feet at the bottom and 18 feet at the top. The slanting wall from bottom to the top made a stronger wall, lessening pressure at the sides. The roof was of pine boards running from the peak of the roof and dipping into a trough formed in the cement surrounding the four sides of the building.

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The roof was of board, no tar roofing or shingles. The joints were covered with batons 2 or 2½ inches wide.

The gable ends were entered by doors and the hives of bees were let down through the floor. Two feet of sawdust, or better still, forest leaves, were laid on top the floor. Do not pack the insulation, be it leaves, sawdust, or finely cut straw.

For ventilation a shaft of pine boards was placed at one of the gable ends reaching to within 6 inches of the floor and extending two feet above the peak of the roof.—J. F. Dunn, Ridgway, Ontario.

SPINSTER JANE SAYS—

March with its bluster is a thing of the past, and April brings us spring, and the resurrection of life to old mother Nature, just as Easter commemorates the resurrection of Christ, the victor over death.

After the cold, dreary winter, hope is resurrected again and we look forward to a more successful season, just as we did last year. "Hope springs eternal in the human breast," is true; hope, the most deeply rooted of all emotions, and losing that, life isn't worth living.

Pondering on that old-time crucifixion, then thinking of more recent deaths in the electric chair, we are amazed at the strides made by civilization in finding a more humane way of causing death. Then we are brought up with a jerk. Is man growing more humane after all? What of poison gas, liquid fire death rays, and other diabolical things with which otherwise great nations are experimenting, or have tried out with awful effectiveness? Is it only criminals to whom the law is humane? And if so, why is there no league strong enough to enforce such international law? The only answer is another question. Would enforcing such law take too great a toll of human lives to be practicable?

How pleasant to turn again to the humble honeybee colony. Has it any criminals, and public enemy No. 1, any underworld of gangsters? Yes, the bee hive surely has criminals, thieves being perhaps the most common. These busy little workers get greedy just as powerful nations do, watch their chance, swoop upon an unsuspecting weaker neighbor and the result is as effective as that of human invasion. Only death and destruction remain—starvation, if any are left in the raided colony. Too weak to protect themselves, such a colony is usually blotted out entirely, though they fight in this losing game to the last minute. Poor little bees! They can do nothing about it, no more than can certain small nations so destroyed. The God-implanted idea of fair play, and a square deal, are lacking in the human race as in bees, with only instinct to guide them.

Public enemy No. 1, may be a wasp, or perhaps a mouse, entering and disturbing the serenity of the colony, and believe me, there is no long drawn-out administering of justice. With bees it is swift and sure. The public enemy is driven forth, too sorely wounded to return, or is slain on the spot, and if too big to be dragged from the hive, is buried beneath a waxy coating, rivaling that of the old-time mummy cases. This is a sanitary measure, but the killing is all open and above board, just a lynching party, as it were, approved by public opinion.

Ants and wax moths constitute the underworld of the bee kingdom, and as in real life, are hardest to exterminate or deal with. Fight them as they may, unless extraordinarily strong and vigilant, it's a case of surrendering to the gangsters, and fleeing for their lives; another case of Lindbergh and his country—leaving in search of security, rather than living in constant fear.

Queens are assassinated as in history, most often by another female of the queen species, who thus rids herself of a rival. While in olden times a king, becoming senile and doddering, sometimes when only unpopular, was shut up in prison while his throne was usurped by a younger scion of royalty, bees are more thorough, more humane. Not one would kill even an aged or worthless queen. It becomes a matter for the entire colony. Together they mass about her, tightening the cordon bit by bit, until her life is squeezed out. As in a firing squad, no one knows just whose bullet caused death, so no single member of the colony can be called guilty. They shoulder the responsibility en masse.

Does anyone know if drones take part in such slaying? I suppose the men will say no male would do such a thing, but that's only Adam-like to lay the onus on the females. I'll bet a cookie the drones were gorging themselves on the stores of honey, thus left unguarded. Nero fiddling while Rome burned. They must admit the females do their work as administrators of justice very well.—Spinster Jane.

Heads of Grain from Different Fields

Individual Sections Profitable

Several years ago there appeared on the market, small sctions of honey, two inches by two and one-half inches, called individual comb honey. For a year or two these miniature combs were quite popular with comb honey producrs and the comb honey trade. The demand by the consumer never slackened. These little sections were a novelty, were unique, and of a convenient size. They were wrapped in cellophane and sold at ten cents each, and appealed especially to that class of trade that buys its honey and other foods in small dainty jars. The small section lost favor, no doubt, with producers, because they could not be produced at a profit. When you consider hive manipulation, labor of assembly, and the retail price, one does not wonder at it. Five to seven cents was the best one could expect for these sections from the retailer. Two years ago, after a season of experimenting, we found it was possible to market these small combs at a profit. In assembling, we cut the foundation to full size for the section. We did not place the supers on the hives until the main honey flow was on in earnest. We used shallow frames containing a little new honey as baits, placing them in place of the sections on the outside rows. A strong hive of bees will fill these small sections at a surprising rate. We then packed four of these small combs into a cellophane-faced 4x5 carton. This style of pack proved very popular with consumers, and sold at 35 cents. We found it very profitable when sold direct to retail trade, at the house, and by mail. We cater to teachers, doctors, lawyers, and other professional people, and receive many repeat orders.—Elmer Carroll, Detroit, Michigan.

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Paraffining Edges of Sections Before Folding

Sections of honey, to command a ready sale, must present a pleasing appearance. Stained and propolized section boxes detract from the attractiveness of comb honey and many persons will hesitate to purchase such. The use of paraffin on the tops of sections is rather common and does much to prevent staining and propolizing, and such propolis as may be placed on them is easily removed leaving the sections clean and attractive looking. One point of the beeway section at which the bees show a great tendency to deposit propolis is the curved part of the beeway. It has been suggested that painting the edges of the sections as well as the tops would be helpful. The section edges can be painted with paraffin en masse, before they are folded, and thus another tedious beekeeping job, cleaning the edges of the sections, made easier.—E. G. Carr, St. Petersburg, Florida.

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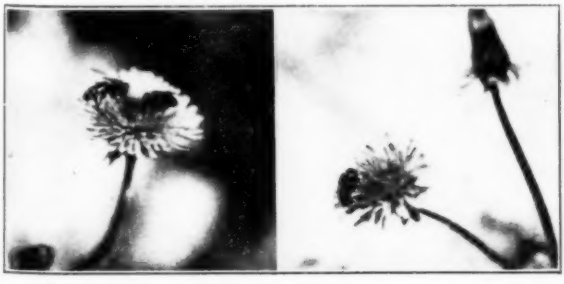
Two-Story Brood Chambers Satisfactory

We have been practicing the method of requeening as described by A. P. Gard in the April number, for five or six years. We certainly agree with Mr. Gard in every respect. Our bees are in two-story hives at all times. We have very few colonies queenless in spring and fall. We can not understand why some beekeepers have such heavy losses. So far we have lost only one colony out of 380.—Joseph H. Hoehn & Sons, Ottoville, Ohio.



Bees on dandelion in May.

In the spring when brood rearing is heavy, the bees are often desperate for pollen, especially if weather conditions have been unfavorable for a few days. Then, when dandelion bursts into bloom the bees revel in the golden pollen in unceasing ecstasy. At times nearly every blossom has a bee, occasionally one is found that has two bees.

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Editorials

Southern Shippers Prepared for Big Season

Reports of floods in the package bee region of Alabama prompted us to write Thomas Atchison, State Apiarist of Alabama, and the following is an excerpt from Mr. Atchison's letter:

> In reply to yours of the 10th, with reference to floods in our section, I am glad to say that there has been no damage at all to the beekeepers, although the river has been at flood stage for several days. We did have a few days of rain and cool weather that possibly set the bees back a little, but I think in most cases it was a blessing to bee shippers as it helped to hold down swarming, as heavy shipments will not begin to move until some time around the 15th and 20th.
>
> I believe as a whole the bees are in better shape this year than they have been in a long time, and in most all sections we have possibly enough honey flow to keep brood rearing going and probably will not have to feed any more this season. It looks now as if we will have one of the biggest shipping seasons we have ever had. However, one trouble is that some of the large buyers of package bees that had orders booked for early shipments have had to change their shipping dates ten or fifteen days later, which in most cases is mighty hard on the shipper. He has to delay filling orders a few days more and possibly the later dates are already booked with other orders. This often times causes considerable confusion.

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What, No Honey?

The shortage of honey in many parts of the country today is a challenge to honey producers everywhere to bend every effort to produce as much honey as possible in the future.

Under the present shortage not only do the local markets suffer, but, what is more serious, the bakery demand, which of late has been taking enormous quantities of honey, will also suffer. In many instances bakers have been induced to change their recipes to permit using honey instead of sugar. What will now happen if these bakers are unable to procure honey? They will naturally go back to sugar. They will want to use a staple sweet that is always available.

Last week at a beekeepers' meeting in Adrian, Mich., Russell H. Kelty, President of the American Honey Institute, made the statement that honey is scarce in many markets of the United States; also that one trouble with the beekeeping industry today is under-production rather than an over-production of honey.

The average yearly production of honey for a seven-year period, from 1928 to 1934 inclusive, was 174,474,321 pounds, a little over one pound for each man, woman, and child in the United States. The production for 1935 is estimated at 140,000,000 pounds, a decrease of over 30 per cent from the high level of production in 1929, which was 211,720,150 pounds.

Prospects do look encouraging for a good honey crop in 1936 so far as the condition of honey plants is concerned. The severe loss of bees from winter killing may reduce the crop to a considerable extent. Some seem fearful that an unusually large crop may glut the market. That hardly seems possible, now that some new outlets for honey have been found. The bakers alone (if more would use honey) could take practically all of the honey we could produce, not to mention candy makers and other potential users.

As a rule, when a good crop of honey is harvested the quality is good, and it is good quality honey that brings repeat orders. A big crop of good honey would help tremendously to make the people of this country more honey conscious, and that is what our industry needs right now.

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Dunking Packages in Syrup Before Installing

We dunk doughnuts and toast in coffee. Why not dunk packages of bees in sugar syrup before putting them into hives? This very thing is being done by a few beekeepers—and it works. When more beekeepers catch on to the trick it will doubtless be used quite generally.

As a rule, packages of bees are fairly well filled with syrup when they reach their destination. Much depends on the amount of syrup provided originally in each feeder can, the amount and size of holes in lids of inverted feeder cans, also the conditions that obtained when bees were shaken into the bee shipping cages (whether there was a good honey flow or practically a dearth of nectar).

Regardless of the amount of sugar syrup or nectar bees may have in their sacs

when they reach shipping destination, it has been and is customary to feed packages of bees sugar syrup through wire screens of shipping cages, by painting the wire screens with syrup applied with a good sized brush. This method is somewhat slow and tedious. Some feed by inverting a Mason jar equipped with perforated caps and containing some syrup over the wire screen of each bee shipping cage.

These two methods of feeding packages before installing are quite satisfactory where only a few packages are handled. The dunking method we are about to describe is much quicker and can be used to advantage when a quantity of packages are installed and when a saving of time is important.

Have a wash boiler or a five-gallon honey can with the top cut out, half full of sugar syrup, mixed one and one-half parts granulated sugar to one part of water. If the weather is cool have syrup warm. Pick up a package and shake or jar the bees down into one end of the cage, then dip or submerge the lower end of the cage into the wash boiler or can of syrup, leaving cage in the syrup long enough for the bees to become thoroughly saturated; about a quarter of a minute is sufficient. Remove the cage and allow the syrup to drip into the boiler. Then carry the cage of bees to the hive intended for the package bees. (The hive should contain 5 or 6 combs, leaving an empty space at one side.) Remove the cover and feeder can from shipping cage and dump the bees into the empty space beside the combs, liberate the queen from her introducing cage among the bees, and put on the hive cover. Later on, as soon as the bees have crawled over on to the combs, the remaining combs should be placed in the hive and a feeder put on in the customary manner.

The three chief advantages in favor of the dunking method are that the bees get established in the hive readily, they do not abscond or drift to other hives because they are so filled with syrup that they are glad to cluster on the combs, and the queen starts to work without any loss of time, which sometimes occurs in the cage method of introduction.

We used this method last year in hives with drawn combs and it worked well. We hope to try it out this year in hives containing frames with full sheets of foundation.

Business of Package Bees No Bonanza

We have been watching some of the package bee men in the midst of their rush season in several southern states prepare their shipments that must go out on certain dates. If some of the northern beekeepers could see their southern brethren of the craft working day and night, Sundays and holidays, in hot sunshine, in the rain, in chilly bad weather; if they could see some of this southern mud and how the trucks slide and get into the ditch; if they could see the work of the Argentine ant and the termites destroying bees, riddling brood frames, hives and hive stands; if they could see the work of the bee moth; if they could see how difficult it is to get competent help in April and May—all these and more—they would say, "Brother, do the best you can. I'll take back all the mean things I said."

The bee package agreement is supposed to provide a margin of profit and it does when there are not too many "ifs" of the kind just mentioned; but even when all, or nearly all, the conditions are favorable, one must have a fair volume of orders before a profit can be made.

There has been and will be a large demand for bees to cover possibly the heaviest winter and spring loss in years. It would be utter folly to cut prices when the demand will exceed the supply. To cut means, in most cases, a cut in service, and, worse than all, leaves no margin for replacement of bees or queens.

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Miles and Miles of White Clover

Starting north from San Antonio we saw miles and miles of white clover along the roadside in northeastern Texas, on route 90. The blossoms were so close together that in some places they were two and three inches apart and that, in spite of the drouth that had prevailed over the state. Fat, sleek cattle were cropping the legume with evident relish. There were only a few bees on the blossoms. This could be accounted for in two ways: First, that there were only a few bees in the locality, or, second, that the clover was too young in its bloom to yield nectar.

As we neared the Louisiana line the abundance of the clover and the cattle feeding on it increased, and then when we were near Baton Rouge, there was still

more. We saw one field of 80 acres of white clover several inches high and spreading almost as far as the eye could reach. With cattle scattered over it and about five bees to the square yard—well, to a northern beekeeper, it was a sight to behold. We were told that there were many other ranches like it—one of 700 acres. On the Mississippi River levees there was also white clover—miles and miles of it furnishing pasturage for bees and cattle, and, what is of great importance, binding together the recently man-made banks against erosion.

So far this sounds like a fairy tale of a bee paradise, especially when we learn that this is an off-spring for white clover in Louisiana and that during normal seasons this legume may be knee high. It would be a bee paradise, indeed, but for one thing, viz: that white clover in the South yields nectar only sparingly.

But why and how does it happen that there is so much white clover along the roadsides in northern Texas. Was it sown by the W. P. A. people to bind the banks? Probably not, says Dr. O. E. Oertel of the Bee Culture Laboratory at the Louisiana University at Baton Rouge, La. His theory is that white clover seed is scattered all through the soil in the first place; that whenever the soil is exposed by grading or otherwise to sunlight, air, and moisture, that the seed that has been lying there for an indefinite time, germinates to furnish pasturage for bees and cattle.

White clover seed can remain viable for an indefinite time and then germinate. It explains why this legume so prized by the beekeepers is able to spring up when the conditions are right.

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Dangerous Loose Talk About Bee Diseases

For some time back we have had in mind the publication of an editorial warning beekeepers, bee journals, and especially foulbrood inspectors, against the indiscriminate use of terms referring to bee disease, which, although harmless among beekeepers and bee inspectors, in the hands of a newspaper anxious for a sensation, may do untold damage to the beekeeping industry at large.

There is valid and scientific proof that the germs that afflict the human race will die in a few hours when introduced into honey. See the work done by Sackett, Lockhead, and Sturtevant in the last edition of A B C and X Y Z of Bee Culture, pages 400 and 401. Of no other natural food can this be said.

Editor LeStourgeon of the Beekeepers' Item, says, on page 140, of the April issue:

> We heartily agree with those who warn beekeepers about discussing afb in the presence of newspaper reporters. Recently the papers have carried items of bee meetings where, according to reporters, "diseased honey" was discussed. Beekeepers know that there could be no such thing as diseased honey so far as human health is concerned, and the public gets the wrong impression from such reports.

Also an article by Miles E. Miller in the March Item, page 99. We quote:

> If I could be editor of a bee journal I would take pleasure in cutting out all such phrases as "diseased apiary," "diseased honey" in all discussions where brood disease is the subject. This form of prevarication; this quibbling to evade the truth is inexcusable in the light of proven facts, and our inspection force are the worst offenders. Scientific experiment has demonstrated that no disease germs injurious to human health can live long in pure honey; and the public is concerned with human welfare more than with beekeeping.

Messrs. LeStourgeon and Miller are right. Such terms as "diseased honey," "diseased combs" and "diseased apiaries" ought never be used in open discussion in a bee convention where a reporter for a newspaper may be present. The reader can see why we hesitate to mention these terms here on the grounds that the mention of them may help to broadcast what has already been started in one newspaper. In the doing of it, we fully realize that what we are about to say may bring us under condemnation with all who have unwittingly been furnishing material to a newspaper which may magnify a mole hill into a mountain. But, while striking at the evil of bee disease we may be fostering another evil that may be a thousand times more destructive to the industry of keeping bees. Why kill the goose that lays the golden eggs?

Let us illustrate: Over fifty years ago, Dr. Harvey W. Wiley, then chief of the Bureau of Chemistry, gave to the newspapers what he regarded as a harmless scientific joke that no one would believe. Briefly it was this: that a scientific genius had developed a process for manufacturing combs and filling the same with glucose; that the product was so perfect that it would deceive even an expert beekeeper. The story was widely copied and recopied with scare-head lines to the housewife. There were pictures purported to show the exact process.

(Continued on page 307.)

From North, East, West and South

SOUTHERN CALIFORNIA, April 5.

Weather: Yes, sir, we have weather to give away out here. One thing we can say, "It is fine." March, so far as rainfall was concerned, was a disappointment. Only about one inch over our part of southern California, while the average for a long period of years is well over two inches during the month of March. April so far has given some good showers and prospects are for more. One thing these late rains assure us a countryside of beauty and charm with flowers in late spring and early summer.

Honey Crop: Old crop honey is so nearly all out of the hands of the producers that little need be said on that score. Prices have hardly held firm.

So far as the new crop is concerned, it is all in the flowers yet. Orange, which is first, will be governed greatly by the weather conditions during the next forty days. Cool, cloudy weather or dry, hot weather may bring disappointment. Let us hope for mild balmy weather when the bees can get a little each day for a month or more.

Beeswax: Beeswax is in good demand with prices up from one to two cents since our last letter.

Miscellaneous: A trip, late in March, to the Great Imperial Valley, gave us some idea of the valley in early spring. The first cutting of alfalfa hay was being marketed. No blossoms at all were out and as almost all of the crop is to be sold, very little if any will be allowed to bloom. Where the fields are to be used for pasture or the hay used for feeding, some bloom will appear later. Flax, of which there are about 30,000 acres planted this season, was just past blooming, with the pods well formed. German reports class this plant as a honey yielder. Beekeepers of whom we inquired reported that they did not consider it of any value in so far as they had been able to observe. We observed that where there were any mustard plants growing the bees were very busy at work, and so far as we could observe they were gathering nectar instead of pollen.

Bees that had plenty of stores were reported in good condition. In our own part of southern California conditions are somewhat different. To have bees ready for the early orange or sage honey we must have colonies strong by April 1. This naturally calls for either early honey from such sources as the alfilerilla, eucalyptus, etc., or plenty of honey stores. And by plenty we have come to the conclusion, means not less than 50 pounds.—L. L. Andrews, Corona, California.

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NORTHERN CALIFORNIA, April 1.

Weather: The weather for the past thirty days, which included a few days of February and all of March, with the exception of the last five days, was as nearly up to the beekeepers' standard as could be desired. Clear and even temperature here in the Bay District where the eucalyptus produced the heaviest crop of bloom for the past ten years. During the past month bees have lost little time. The first week of April has been cloudy, finishing with a good rain.

Honey Prospects: Further north where the bees depend on fruit bloom, conditions were not quite so good. The weather was all that could be desired till late in March when several days of north wind and cold that threatened the fruit, confined the bees to their hives. Smudges were used to protect the oranges. The coverage crop is good and will help out quite a little. Cool and foggy weather has held back the growth of the sage, which will cause the nectar flow from this source to be a little later than last season. The new growth of the sage is a little disappointing, but the late rains may help out some.

Eucalyptus blooming will continue through April when migrators will move their bees to the alfalfa and other fields. Unfortunately the alfalfa district is overcrowded. This condition has come about by the introduction of other crops which has cut down the alfalfa acreage.

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Extraction in the eucalyptus commenced in March and the reports coming in indicate that the crop will not be as heavy as at first expected.

Beeswax: There is a good demand for beeswax with little being offered.

Miscellaneous: It was expected earlier in the season that there would be an unusual amount of swarming. So far this prediction has not come true. Our wide-awake beekeepers are giving more and more effort to securing non-swarming stock.

There is very little old honey in the hands of producers. This should cause a demand for new honey. Brokers are slow about buying, each seemingly waiting on the other to fix the market price. Fortunately there is less than the usual amount of new honey being rushed on the market. A few lots of eucalyptus have been sold in Oakland at 5½ cents, which is better than last year prices.—Cary W. Hartman, Oakland, Calif.

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TEXAS, April 1.

Weather: The weather throughout March was beneficial to the beekeeper providing rains come during the first few days of April. Dry and cool weather have retarded both plants and brood rearing until the two have at this date reached a balance. A good rain would mean a heavy honey flow and the bees are sufficiently strong to take care of it.

Honey Prospects: Swarms have been reported frequently, some as early as March 8, in the extreme southern part of the state and quite often during the last week of the month in the San Antonio area. Heavy brood rearing and some honey storage is reported in the Lower Rio Grande Valley. Guajillo and catsclaw are in full bloom and are of great promise.

Miscellaneous: Package bee shippers are ready and awaiting orders to ship. The plant condition is such as to warrant abundant brood rearing provided there is sufficient rainfall. Beekeepers are enthusiastic and are preparing their bees and equipment for a large flow.

An indication of the interest in the world-wide beekeeping meeting to be held in San Antonio, November 24 and 25, was evidenced by the gathering of the arrangements committee in San Antonio, March 10, when E. R. Root, Frank C. Pellett, E. G. LeStourgeon, E. L. Thomas, T. W. Burleson, O. S. Park, and H. B. Parks held the initial session of the arrangements committee.—H. P. Parks, San Antonio, Texas.

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OKLAHOMA, April 7.

Weather: As I review my notes I have the feeling of a war correspondent reporting a deluge of catastrophes rather than one who is reporting the weather and beekeeping conditions of this state.

With January average, February the coldest continuous stretch in several years, resulting in heavy loss of bees, and March the driest month in 40 years and the warmest in five according to state records, April started of with a killing northerner that wiped out almost all of the state's fruit crop. In most sections of the state very little rain has fallen in more than four months. Fortunately heavy rains last fall saturated the ground so that there is yet moisture below the top soil which enables sweet clover to continue growing.

Honey Prospects: Because so many weak colonies have already been lost, and more are likely to be lost, indications point toward a lower average crop production for the state. Should the surplus honey plants yield abundantly, many colonies will be forced to build up on it.

Condition of Colonies: Bees are low on stores. Strong colonies have about the equivalent of six full combs of brood. Bees are using an excessive amount of water. A shortage of pollen is noted in the hives. In order that colonies may be in full strength for the main honey flow, they will have to be given additional food. Since the recent freeze few sources of nectar are available. Rapid consumption of honey in the food chamber is evident.

Miscellaneous: L. J. Austin, state inspector, is boosting and advertising beeke ping in this state. Recently he sent out a prepared leaflet on beekeeping aids to more than 500 beekeepers and farmer-beekeepers over the state.

Alfalfa would be a good honey source in this state were it not cut down before it has a chance to bloom for long. In a few sections of the state alfalfa is grown for seed and it is reported that heavy honey yields result. An entomology student stated that last summer during the

drouth he placed a colony of bees near an alfalfa field that was permitted to go to seed. Two weeks after he had placed the bees there most vegetation had dried up and he, thinking his venture had been useless, went to feed his bees. Imagine his surprise when he discovered that they had filled up their brood chamber as well as a surplus super of fine alfalfa honey.

The soil conservation units have been doing much beneficial work terracing rundown, thin soil land and planting sweet clover which should provide excellent bee pasturage. Larger centralized masses on well terraced land will mean larger yields. —C. A. Baltzley, Oklahoma City, Okla.

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WESTERN WASHINGTON, April 7.

Weather: In February we experienced the coldest weather of the entire winter. March came in like a lamb, but on the 12th the lion chased the lamb out and held sway throughout the remainder of the month. On April 2 came the first real spring day, when work commenced in the colonies with a zest.

Honey Crop: Losses suffered by colonies resulting from adverse weather conditions in March, can not at this time be accurately given; reports from different sections varying widely.

Bees are now bringing in pollen mostly from alders and pussywillows, indicating that they are beginning to rear brood; and they are becoming increasingly active as "old man winter" passes into history.

Miscellaneous: The problem of our honey producers is not now one of production only. As volume increased to that of carload proportions, the marketing probl m also increased; until from sheer necessity, the Washington Co-operative Beekeepers' Association was organized. I have before me a letter from the President of the Association, Mr. I. L. Swain. The following excerpts are taken from his letter:

"The first State Association was started in Yakima, and included only the beekeepers in this valley, as they were about the only beekeepers in the state at that time. Later beekeeping got to be quite an industry on the west side in the cutover timber where there was an abundance of fireweed. The West Siders were about to form an association of their own, when the East Siders got together with them and formed the present association. Meetings are held annually each fall, one year on the East Side, and the next year on the West. It has been the custom to elect an East Side President to preside over the West Side meetings, and a West Side man to preside at the East Side. The next meeting will be held some time in November or December, at Puyallup.

"As to membership and attendance there has been a decided decline compared to ten or twelve years ago. This is easily explained by the conditions that have come about during that time. The price of honey was as high as 18 cents in car lots during war times, and as low as 4 cents three years ago. At the same time the yields were less per colony, as the East Siders had more and more trouble with poison sprays put on to combat insect pests; and the West Siders found their fireweed locations grown over with brush and the new locations too far off good roads to be profitable. Quite a few beekeepers on both sides that were unable to sell out, have just about let their bees die off for lack of care because they have had to seek other means of making a living."

From this it can be appreciated what adverse conditions the beekeepers of the state have had to face during the depression years.—Ewing C. Pershall, Seattle, Washington.

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EASTERN IOWA, April 7.

Weather: What a winter it was—and after the nice mild weather that took the snow off in a hurry and put the fields in shape for oat sowing, Old Man Winter is staging a come-back and today the ground is covered with 3 or 4 inches of snow and frozen up solid again, so another late spring is in store for us.

Honey Prices: Everything would indicate strong prices for honey the coming season. Stocks of old honey are pretty well cleaned up and we can see no prospects of a heavy yield, though the flow may be good as there will be a decided shortage of bees to gather it.

Miscellaneous: Outside wintered bees have suffered heavy losses and no doubt those that were wintered in cellars will be weakened very materially after being removed from their winter quarters.

Some smaller beekeepers have reported to me that they have lost every colony

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wintered outside. Some are reporting loss of from 25 to 30 per cent, but I am fully satisfied they will go much higher. Besides, I can't see how those that will survive can ever get in shape for the honey flow which up to this last cold spell, looked very promising. In fact, the prospects look the best in five years.

Conditions in the South, where our package bees come from, have not been the best, and very likely the demand for early package bees (which are the only ones that are of any benefit to Iowa beekeepers if a honey flow is expected) will far exceed the supply—another handicap to an already bad situation.

Experience teaches a good school but the tuition comes high (quoting Mark Twain). Beekeepers have (and I think many will admit it) grown a little careless about this wintering business, because of the comparatively mild winters we have had in the past 10 years. It only goes to show that too much confidence should not be placed in Iowa winters. It just doesn't pay to winter bees in any way but the best we know how, and that will be none too good.—W. S. Pangburn, Center Junction, Iowa.

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SOUTH DAKOTA, April 6.

Weather: The weather, if fully covered, would sound like a book-length novel. But really it wouldn't be such a "hot" story. Even at this date drifts are still in evidence from our last snow storm, four days ago, visibly mixed with compliments from the Dust Bowl as the storm switched to a southwester. Freezing weather continues with 8 below recorded in the Black Hills the first of this month. The only animate sign of spring to date is the appearance of robins and larks, and of waterfowl en passage.

Honey Plants: General opinion is that prospects are very favorable. Winter precipitation has been abnormal and nearly all of the thaw has been absorbed. It is unlikely that clovers have been winter damaged.

The conservation program recently effected by the New Deal is sweet music to the beekeepers, although some of them think that if everything else in these United States can be susidized, why not the beekeeper. About a dollar per colony from Uncle Sam for allowing our bees to pollenize the blossoms wouldn't be such a bad idea, and entirely in keeping with the status quo. In any event the government program will mean acres of clover and alfalfa where never a one was before, so we look to a pleasant and fragrant future. The demand for legume seeds locally is suddenly brisk. With proper weather may it be like those good old days when a breeze o'er the clover was heavy with perfume, and extracted producers limped around with stitches in their backs from lifting too much. Indeed, some turned to comb production to save their backs.

Colony Condition: Mortality was unusually high. Most strong colonies survived; most weaker ones did not. Undoubtedly many more could have been saved with a more sensible distribution of stores. Some examinations have shown the clusters to have started in the light weight combs in the center and working to one side where they starved when the honey was consumed there. The other side of the chamber would contain full combs. If all the full combs had been placed to one side, graduating down to the lightest combs at the opposite side, it seems as though the starvation problem could have been avoided during the extended cold period.

It is expected that more packages will be received in the state this spring than for the past several years.

Miscellaneous: Some of our larger producers who have ranged their bees in selected locations outside the state the past two years are back to stay which indicates that other sections have their drawbacks and also that prospects are looking up here.—J. F. Norgren, Junius, South Dakota.

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INDIANA, April 7.

Weather: Following several warm days, snow and low temperatures prevailed throughout the last week in March and the first week in April, which is not so good for bees with brood started. Many colonies, already weak, doubtless will perish in the next month or two. Winter and spring losses of outside wintered bees probably will amount to at

least 25 per cent and possibly 50 per cent or more.

Our three cellars of bees, wintered on aster, came through with a loss of only one colony (queenless), notwithstanding they had no flight after the first week in November. They were taken from the cellar March 9 and 16, had a good flight and apparently are now in prime condition.

Honey Crop: White clover is showing up well this spring and with favorable weather should bring a crop of white honey where bees are in condition to gather it. Few beekeepers in this locality buy package bees, consequently there will be many empty hives.

Miscellaneous: Honey, both comb and extracted, is practically all cleaned up. We have many inquiries for honey to be shipped but there is barely enough to supply local needs.

Owing to the prevalence of price-cutting in comb honey, commercial producers who figure costs are shying away from that branch of production. No. 1 comb, cellophane wrapped and in new cases, has been brought in from outside and sold here to grocers at $2.25 a case. No beekeeper can afford to produce comb honey at that price.—E. S. Miller, Valparaiso, Indiana.

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MICHIGAN, April 12.

Weather: Continued sub-zero temperatures in February caused heavy losses in southern Michigan where colonies went into winter low on young bees and on poor stores. The thin honey stored last summer caused dysentery, and the absence of any honey flow in late summer resulted in less brood rearing for winter. Losses ranging from 40 per cent to nearly 100 per cent in commercial apiaries resulted. North central and northern Michigan fared better, winter stores being of better quality, and losses in that area will probably not exceed 20 per cent among commercial producers. Unpacked and otherwise neglected bees suffered 30 per cent to 60 per cent loss, even where covered with snow most of the winter.

Since March 1, the weather has been favorable to clovers, no damage being reported from freezing and thawing. On account of little frost in the ground, melting snow went down gradually and stayed in the soil, improving prospects for the honey flow.

Honey Sales: To show how little honey remains in beekeepers' hands, at a recent Tuscola County meeting of about 30 beekeepers it was impossible to find a case of 24 one-pound bottles of honey in that county. Several had been sold out for a month or more. O. H. Roth, Reese, Saginaw County, was the only beekeeper present who had honey on hand and he donated a case to the Tuscola Association. Retail prices remain about the same. Bulk prices range from 7 to 8 cents. Local bakers are buying in ton lots whereas they recently bought in case lots.

Miscellaneous: More packages than ever before will be used this spring in Michigan.

The Registration Law is working out better than was hoped for. Looks like the fees would total $11,500 to $12,000 by the end of the fiscal year, or less than half the amount necessary to carry on adequate inspection service. Counties receiving complete inspection last summer have responded with nearly 100 per cent payment of registration fees, showing that beekeepers want inspection and will pay for services received. The Legislature will be asked to appropriate twice the amount raised in fees for the next two years, since bees are worth twenty-five times as much in Michigan for pollination as for honey and wax.

D. P. Barrett, Chief Apiary Inspector, called in about thirty-five inspectors for a two-day school of instruction, April 6 and 7. Intensive instructions were given on attitude, law, regulation and public relations. Much good was accomplished.—R. H. Kelty, Lansing, Michigan.

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CONNECTICUT, April 10.

Weather: Many sections of New England have experienced heavy floods with millions of dollars in damages and lives lost. Rains have not ceased yet and the ground is full of water. Maples, elms, willow, and other early flowering plants are out, but the weather has been too cold for the bees to do much. Pollen is coming in freely when temperature is suitable. The percentage of winter loss is much less than

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was forecast earlier but many colonies are rather weak.

Honey Crop: The prospects for a honey crop this season are excellent. The winter was very cold but a heavy blanket of snow kept the ground from freezing too deep to harm the plant roots. We have had two or three years of crop failures and beekeepers are looking ahead to a better season in 1936.

Miscellaneous: Our market is cleaned up with both comb and extracted honey. Prices should be better this coming year. This market is like many others that are surrounded and canvassed by large bottlers and those trying to dispose of their crop no matter at what price. One chain store is selling five-pound pails at 55 cents. Deduct six cents for the pail and this leaves less than ten cents per pound for the bottler. I wonder how much the producer gets after the bottler has got his. The store should get at least 10 cents; freight or cartage, 5 cents; waste, overhead and profit for the bottler, fifteen cents. This leaves but thirty-five cents for five pounds of honey for the beekeeper. This does not include delivery to the bottler. This honey is being advertised as "Fine Clover Honey." I am wondering which one of the three or more hands through which it has traveled is making a fortune.—A. W. Yates, Hartford, Connecticut.

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WESTERN NEW YORK, April 11.

Weather: Weather conditions throughout the winter and spring have been ideal for honey plants. There has been a good covering of snow all winter with only a very few freezing nights since the snow left. Rains have been frequent and plentiful. Moisture conditions are probably the best right now that they have been in many years. We know little as yet about the condition of bees. A few flight days early in March permitted a hasty examination of many of the yards, revealing about normal conditions. We seem to have had better wintering in the substitute paper cases than in regulation heavily packed wood cases. But as the weather has continued cold since these early examinations with no days warm enough to permit flight, it is not advisable to make a definite statement and the final check-up may be different.

Honey Sales: We have been sold out of honey for some weeks, and I do not know of any lots still in hands of producers. Judging from inquiries the demand is still fairly good.

Miscellaneous: In contrast to the fairly good market for honey, prices and demand for apples are about as poor as has been known for many years in this section. The only noticeable movement seems to be for relief purposes at a very low figure and paying no premium at all for quality. At present about four-fifths of the entire movement is through relief agencies. Economic conditions are surely not improving in this section. Governmental efforts to promote prosperity remind us of the dog chasing his tail. We sell apples to relief agencies for about one-half the cost of production, then pay the money back to the government in increased taxes. And in the doing still further increase the costs of production and taxes. How long can a dog chase his tail?—H. M. Myers, Ransomville, New York.

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NEW JERSEY, April 10.

Weather: "It was a hard winter this winter, all right," is what an old-timer recently remarked, and this sums up the situation very nicely. January and February were what are usually referred to as old-fashioned winters. This period was characterized more for the amount of snowfall and for the long continued cold weather than for its actual severity. I can not give the mean low average of the temperature for that time but it was somewhat of a record breaker and felt even meaner and lower than shown by the records. There has not been the heavy winter losses with bees this spring as has been experienced in the past two seasons. Strong colonies that had the additional advantage of going into winter quarters with some sugar syrup in the brood nest and protection from prevailing winds suffered little from the rigors of winter. Those who did not have these conditions have had losses in proportion to the absence of the above requirements. Spring dysentery seemed to be general throughout the northern part of this

state, at least, due to the long confinement. This condition was observed even where colonies were supplied with winter stores obtained from the early season flow and was by no means confined to those wintered on the fall honeys alone.

This winter has emphasized, perhaps more than ever, how important in the winter program is the feeding of 10 pounds or more of sugar syrup at the close of the fall brood-rearing period. I think it can be safely said that poor stores cause more winter loss than severe cold weather.

Miscellaneous: It is possible that this year may prove to be a good one for clover in New Jersey. There was sufficient rainfall last fall to secure a strong growth of the plants and they went into winter in fine condition. The covering of snow should have been a helpful factor in keeping them over the winter. All that is needed is a reasonable amount of rain this spring to have them come into the blooming period in prime shape.

With the exception of the poultry industry and fair prices for milk, New Jersey farm products and fruit prices have been disastrously low. This should again bring the attention of farmers and others to the value of the returns that are possible from bees under good management. —John Conner, North Caldwell, N. J.

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ONTARIO, April 10.

Weather: The weather to date has not been much like spring. Locally bees did not have a real cleansing flight until March 24, but throughout southwestern Ontario they flew freely about March 1, and in some few places even earlier.

Honey Prospects: Snow remained on the ground continuously from mid-November until mid-March. All clover fields look very well indeed. There is little change in the honey market and there is enough honey to last until new crop is harvested. Possibly there may be a small carry-over in some places. Beeswax has been marketed by most producers and lately I have had a few calls for small lots to supply hardware stores and vendors of artists' supplies, etc.

Miscellaneous: From what I can learn, the bees generally have wintered well in counties immediately north of Lake Ontario, wherever they had an abundance of stores. One of our apiaries in Victoria County wintered well, with the exception of a few colonies (I am almost ashamed to tell of it) that actually starved. At two local apiaries we had quite a heavy loss from the same cause and I am at a loss to account for my lack of judgment in not supplying the needed stores, or the reason for such an abnormal consumption of stores.

Some conclusions have been reached. The two yards where the heavy loss occurred were abnormally strong in bees last fall and they had almost empty brood nests when buckwheat honey was removed. That meant that these two apiaries were fed fairly early so as to avoid having any colonies starve in the early fall. It looks as though brood rearing must have started last fall and as a consequence much of their stores were used up early in winter. Some starved colonies showed unmistakable evidence of having perished some weeks ago and, as I know that these colonies were heavy when fed last fall, brood rearing must have caused the trouble.

I have commented in the past on the fact that the comparatively small eight-frame L. hive seldom gives us any trouble from being short of stores in the spring, and it was the ten-frame hive which gave us all the trouble this spring. The simple reason is that our eight-frame colonies are always fed all they will take and that means no empty space for early winter brood rearing. I am not by any means advising beginners to use the eight-frame hive, but I am absolutely sure of our conclusions being correct in so far as wintering is concerned. Of course, if the ten-frame hives were given similar treatment and fed all the bees would take down, I would expect similar results, but the extra amount is not often given, and the bees have some empty combs to cluster on (the winter nest of by-gone days) and brood rearing often starts too early. However, the fact remains that we had some bees starve this past winter, and in telling this I realize that it is nothing to my credit to admit such a piece of folly. Naturally we say "never again," but common honesty forces me to admit that I have made the same vow more than once in the past.—J. L. Byer, Markham, Ontario.

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Gleaned by Asking

THE EDITORS

What to Do With Combs of Granulated Honey

Question.—I have about 20 standard combs of honey that have begun to granulate, in fact, it seems doubtful if the honey can be extracted from the combs satisfactorily. I intend to buy some package bees this coming spring. Would it be all right to use these combs of granulated honey in the hives intended for the packages?—W. M. Jones, Michigan.

Answer.—By all means, use these combs of granulated honey in hives intended for package bees. You should be sure, however, that the combs of honey were not taken from colonies of bees that were infected with American foulbrood. Even though the honey is granulated, the bees will use it, especially when settled warm weather comes. The heat generated by the bees in the hive will help to liquefy the granulated honey in order to make it available for the bees. If you will put two or three of these granulated combs in each hive, placing the combs near the outside of the hive, and if you will put empty combs, or full sheets of foundation, in the middle of the hive, you will find that the bees will use up the honey in due time. It will doubtless be advisable to feed your package bees sugar syrup, as well as the honey, and especially if it is necessary for you to use some full sheets of foundation in the absence of drawn combs.

Painting Hives

Question.—I would like to know if hives and supers should be painted on the inside the same as on the outside.—R. W. Solinger, Ohio.

Answer.—We do not consider it advisable to paint the inside of the hives. As a matter of fact, the bees are likely to apply a very thin coating of propolis to the inside of hives, which has a tendency to preserve the wood. The outside of the hives should, of course, be kept well painted.

Keeping Bees on Shares

Question.—I have a chance to take care of some bees for a neighbor. What, in your opinion, would be a satisfactory agreement in the event that I would do all the work and the owner of the bees furnished all of the equipment?—J. A. Allen, Minnesota.

Answer.—The usual terms in keeping bees on shares are that an equal division of the honey crop be made at the close of the season. There are many details which vary according to conditions and circumstances. These should be incorporated in a written contract similar to those outlined under the heading "Bees on Shares," in the A B C and X Y Z of Bee Culture. There are so many chances for misunderstanding in entering into a contract of this kind that it should be carefully prepared, to cover, as far as possible, every detail. The question of paying for containers for extracted honey and for sections, foundation, and shipping cases for honey, should be clearly understood by both parties, and put into writing. As a rule, the expense of containers is shared equally between the owner and the one who takes care of the bees. The arrangement for such an emergency as feeding, during a poor season, or, moving the bees to another location, if necessary, should be mentioned in the contract, to prevent any misunderstanding.

Copper Tubing for Processing Honey

Question.—Have you ever had any experience running honey through copper tubing, or in contact with copper of any kind?—Manley T. Resseguie, Pennsylvania.

Answer.—Copper tubing has been used considerably for honey. Unless the honey was sour, we do not believe there would be any particular action on the copper that would hurt the honey. We do not like to see a small amount of honey stand for a long time in a copper container or in a copper pipe, but for just running the honey through the pipe, we think there would be no difficulty. To be on the safe side, we think tinned copper pipe could be secured that would be perfectly safe under all circumstances. Be very careful that the honey is not overheated; that is the only objection to a heating coil. If the temperature is watched carefully and the honey kept moving, we think there will be no trouble.

Creosote for Bottom-Boards

Question.—Is creosote paint satisfactory for bottom-boards? It has an odor that faintly resembles phenal.—Wallace C. Swank, Michigan.

Answer.—So far as we know, the odor of creosote is not offensive to honeybees. We have used this on hive stands to good advantage. When the creosote is freshly applied it might have a slight deterrent effect on the bees. It is natural to assume, however, that the hive bottoms would be allowed to dry for a time after the application of the creosote. (Have any of our readers had any unfavorable experience with it?)

Talks to Beginners

M. J. DEYELL

There are so many beginners in various parts of the country that it is somewhat difficult, if not impossible, to outline a system of apiary management that meets the needs of all. The principles of beekeeping are the same the world over, but the application of these principles vary as to conditions that obtain in different lattitudes and regions.

In some of the southern states surplus honey is being stored, while in other states a portion of the crop has already been harvested. During May, the tulip tree yields surplus in parts of Tennessee, Kentucky, and Virginia, the saw palmetto in Florida, horsemint in Texas and sage in California, also many other honey plants.

In the northern states colonies build up rapidly on dandelion, fruit bloom and other minor honey plants. It is important that beginners in different states make a study of the various honey plants that occur in their immediate vicinities. It is still more important that beekeepers know the aproximate date on which the main honey flow starts in their respective locations. It would pay each beginner who is in doubt on this matter to get in touch with some experienced beekeeper living nearby.

Keep in Mind Important Requirements

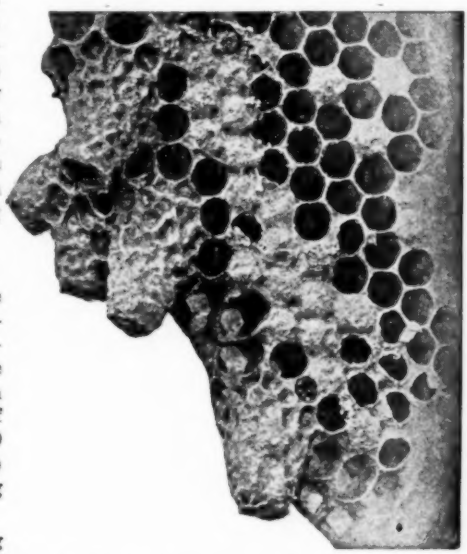
Be sure to keep in mind the objective in beekeeping, viz., surplus honey. To secure surplus honey at least three requirements in apiary management should be observed: (1) to have a good queen in each colony; (2) an ample amount of stores in each hive, never less than 20 pounds during the spring months; and (3) ample comb space which means supplying supers when needed.

As colonies are checked through during this month any old worn out queens found should be removed and replaced with young queens.

Any colony that is running low on stores should be fed either combs of honey, or sugar syrup. During this month colonies use a great deal of honey in brood rearing. It requires almost a full comb of honey to produce a comb of brood. As a rule, strong colonies are able to make a living during May, when the weather is fine. It is during a rainy cool spell that stores are likely to disappear rapidly and when the danger of starvation is greatest. Those who use the food chamber hive rarely, if ever, have to worry about their bees not having enough to eat.

The Time to Give Supers

It is usually necessary to give a super of drawn extracting combs to each colony occupying a single-story hive, some time during this month. Failure to supply more comb space may result in swarming. This additional super not only furnishes room for incoming nectar, but it also supplies more comb space for brood rearing, as no queen excluder is put under the super given and the queen can therefore go up into this super to lay. It is amazing how rapidly colonies develop during this month when



Fully developed queen cells from which queens are ready to emerge.

nectar and pollen are plentiful. It is not uncommon for strong two-story colonies to have brood in 14 or 16 combs by the end of May.

Management of Food Chamber Hives

Overwintered two-story or food chamber hives may become crowded during a fruit bloom and dandelion honey flow. An

extracting super of combs should be given on top of each food chamber over a queen excluder. This relieves congestion in the two-story hive and makes room for nectar above. As a rule, much of the dandelion and fruit bloom honey is consumed in brood rearing, as there is likely to be almost a dearth of nectar in many regions for about ten days or two weeks, between fruit bloom and clover.

How to Detect Signs of Swarming

Sometimes a colony may prepare for swarming in spite of all swarm control measures used. Such a colony will start to build queen cells. When these cells are first started they resemble shallow cups. A little later each cup contains an egg. In three days the eggs hatch into larvae and in five days more the cells are built out to full size and capped.

Queen cells are usually built along the lower edge of combs. They are easily recognized because they are different from worker or drone cells. Instead of being horizontal as are worker and drone cells they are built in a vertical position. They much resemble peanuts.

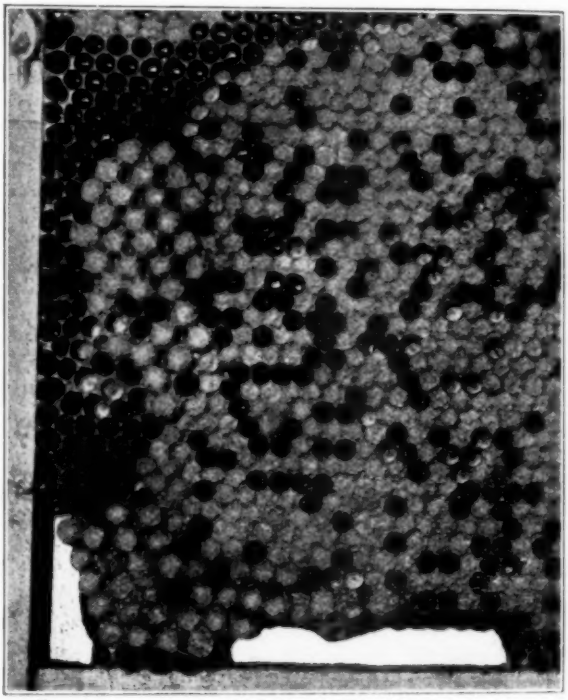
What To Do if a Swarm Issues

In case of swarming, the old or parent hive should be set on a new stand a few feet away, turning its entrance away from its former position. A new hive containing either drawn combs or full sheets of foundation should be placed on the old stand. Usually a swarm will cluster in a small tree. The limb on which the bees have clustered should be cut off and the swarm shaken in front of the hive intended for the swarm. It is an advantage to put a frame of brood from another colony into this hive prepared for the swarm, so that the bees may enter the hive readily and get established quickly in their new home.

After two days the parent hive that was moved away should be given a turn to face the same direction as the new hive. Then, after seven days, during the middle of the day when a large percentage of the old bees are in the fields, the old hive may be moved to another location about 15 feet away.

Managing Packages After Installation

It is indeed interesting to watch the development of packages into normal colonies. Beginners who have put packages into hives containing frames with full sheets should be sure to keep a constant feed of sugar syrup on each hive until the main honey flow is on. A continuous feed of syrup enables bees to draw out, or build, combs from full sheets of comb foundation.



Drone and worker cells, both capped and uncapped. Larvae can be seen in some of the uncapped cells. The larger size and the protruding cappings of the drone-cells may be easily noted as at the lower left-hand corner of picture above.

A colony being developed from a package goes ahead faster after young bees begin to emerge from the combs. The bees that came with the package soon begin to die off and are replaced by these young emerging bees. The most critical time in the development of a colony from a package is during the first three weeks, or during the development of the first cycle of brood.

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HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

COMB and extracted. Howard Grimble, Holcomb, N. Y.

FANCY clover and fall honey. Kalona Honey Co., Kalona, Iowa.

300 lbs. amber extracted, 6c. Irvin VanDevier, Medina, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

FINE clover honey in 60-lb. cans, 7½c per lb. Jos. H. Hoehn, Ottoville, Ohio.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

WHITE clover comb and extracted honey. Porterholm Apiaries, Adrian, Mich.

FOR SALE—Extracted honey in new 60's. H. Blitz, Box 3438, Philadelphia, Pa.

FOR SALE—White amber and buckwheat extracted. F. W. Lesser, Fayetteville, N. Y.

FOR SALE—Fine grade light amber bulk comb honey. Hyde Bros., New Canton, Ill.

ORANGE honey in new sixties. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—No. 1 white honey and light amber. The Hubbard Apiaries, Onsted, Mich.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

WHITE comb honey, partly candied, $2.00 case; amber, $1.75. C. B. Howard, Geneva, N. Y.

18,000 lbs. of delicious fancy white and blended extracted honey. Sample, 15c. Burghardt Honey Farms, Grand Island, Nebr.

OUR 1936 crop of best Michigan clover honey should be ready for the market in July. Speak for your requirements. E. D. Townsend & Sons, Northstar, Michigan.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

HONEY PACKERS—Write us for prices and samples on California and western honeys. We stock all varieties. Hamilton & Company, 108 West Sixth St., Los Angeles, California.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—Dark honey, also capping melter honey. Edw. Klein, Gurnee, Ill.

WANTED—White, amber and overheated honey. State price. C. Jankowski, Russell, Ill.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

BEESWAX WANTED—Please quote your lowest price on wax, F. O. B. your station. W. A. Chrysler & Son, Chatham, Ontario.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Car lots or less; clover extracted honey and light amber, new cans. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

SPOT CASH PAID FOR COMB AND EXTRACTED HONEY. Send samples and best price. C. W. Aeppler Co., Oconomowoc, Wis.

HIGHEST CASH PRICE for your beeswax. Write for my high prices and shipping tags before disposing of your wax. The Walter T. Kelley Co., Paducah, Ky.

FOR SALE

FOR SALE—200 comb-honey supers. Lorena Zittel, Mondovi, Wis.

NEW bee supplies for honey or bees and queens. Dillon & Sons, Adrian, Michigan.

YOUR wax worked into medium brood foundation for 15c pound; thin super, 22c. Fred Peterson, Alden, Iowa.

PIERCE automatic queen grafting tools, $1. Aluminum electrical uncapping knives, $5 and $7. 340 Crosby St., Pasadena, Calif.

HOFFMAN FRAMES, mail order brand, accurately made; $35 per 1000, f. o. b. Medina; while stock lasts. The A. I. Root Co. Medina, O.

FOR SALE—Comb foundation at reduced prices. Plain wired and thin section. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

QUALITY bee supplies. Prompt shipment. Reasonable prices. We take honey and beeswax in trade for bee supplies. The Hubbard Apiaries, Onsted, Mich.

USED bee supplies—30 hives, 40 comb honey supers, etc., at Higgins and Barrington Roads. Furnish inspector's certificate. Mrs. Herman Harz, Palatine, Illinois.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

ROOT No. 25-B 4-frame multiple reversible hand extractor, in good condition. Used about 5 years. Price, $35.00, f. o. b. Valley Falls, Kansas. Claud Lane, 1201 Walnut St., Valley Falls, Kansas.

XUM

FOR SALE—Complete Simplicity extracting outfit. Evelyn Sawyer, Hardin, Mont.

O. DARCHE has real bargain in used equipment. Write 20 Temple St., Palmer, Mass.

STRAW SKEP BEEHIVES for ornamental gardens. Photos on request. G. Korn, Berrien Springs, Mich.

HUNDRED pounds Dadant wired foundation; 70 new frames; 30 three-story hives; miscellaneous. Ernest Noyes, Coldwater, Mich.

3000 new standard Hoffman short top-bar frames, $3.60 hundred; 1200 new shallow frames, $2.50 hundred. Ray Hiltner, North Creek, Ohio.

WIRED FRAMES—Shipped K. D., nail up perfectly, no warped combs. Let us prove it. Discount on trial order. Catalog free. A. E. Wolkow Co., Hartford, Wis.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

SPECIAL—While stocks last. We have a limited supply of slightly damaged copies of the previous edition of "Starting Right with Bees." Price, 30c postpaid. We also have some damaged copies of the new A B C and X Y Z of Bee Culture, which are priced at $1.00, $1.50 and $2.00. The A. I. Root Co., Box G-7, Medina, Ohio.

BEES AND QUEENS FOR SALE

ITALIAN queens, good quality. W. G. Lauver, Middletown, Pa.

CHOICE Italian queens. White Pine Bee Farms, Rockton, Pa. With Gleanings from 1911.

FOR SALE—78 colonies bees, also supers, supplies and extracting equipment. State inspected. Fred Gordon, Ames, N. Y.

THREE-BANDED Italian bees and queens. Write for circular. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, N. C.

50 full colonies of bees, wintered in two-story hives, 10-frame; A-1 condition. Guaranteed no disease. F. Hofmann, Riverside, Ill.

HOWELL'S THREE-BAND Italian queens pay their way, and must please the customer. Now ready, 75c each. D. W. Howell, Shellman, Ga.

"SHE-SUITS-ME" queens. Season of 1936: One untested queen, $1; six queens, $5. Linebred Italians. Ready May 20. Allen Latham, Norwichtown, Conn.

CAUCASIAN, disease resisting, hardy. Northern, gentle, prolific young queens. June 1. No packages. Booklet. Agreement prices Bird's Apiaries, Odebolt, Iowa.

EXTRA yellow Italian queens that produce bees a little more yellow than the three-banded; more gentle and just as good workers. Untested, 75c each. Starting early in May. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, Rt. 2, N. C.

"CAUCASIAN" package bees and queens for spring delivery. Untested queens, 75c each; 2-lb. pkg. with queen, $2.45 each; 3-lb. pkg. with queen, $3.15 each. Shipping season begins April 1. Safe arrival and satisfaction. Lewis & Tillery Bee Co., Greenville, Ala.

MAYEUX BEE FARM—Italian bees and queens. Honey Girl strain, for spring delivery. Will ship on comb of brood and honey or combless. 3 lbs. bees, with queen, $3.15 each; 2 lbs. bees, with queen, $2.45 each; 4 lbs. bees with queen, $3.85 each. Safe arrival guaranteed. Mayeux Bee Farm, Alex L. Mayeux, Prop., Hamburg, La.

REITZ'S queen bees will accept honey or beeswax as cash for queens. Send sample of honey and price. J. W. Reitz & Bros., Summerfield, Fla.

BEST Mountain Gray Caucasian bees and queens. Select queens, 75c each. 2-lb. package with queen, $2.45; 3-lb. package with queen, $3.15. Full weight, safe arrival guaranteed. Book order now to reserve your shipping date. P. B. Skinner Bee Co., Greenville, Ala.

THE NORMA ROY APIARIES—Italian bees with queens on frames of brood and honey. 2 lbs. bees with queen, 1 frame brood, $2.45; 3 lbs. bees with queen, 1 frame brood, $3.15. Health certificate with shipment, and safe delivery. Norma E. Roy, Hessmer, Louisiana.

EARLY PACKAGE BEES — Prompt shipment, beginning May 1. Two-pound package bees with queen, $2.45; three-pound, $3.15; shipped by express collect, or if by parcel post, add postage. Choice hardy Italian queens, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa. Box 363.

GOLDEN pure Italian queens that produce workers; very gentle to handle, good honey-gatherers. I have never had any foulbrood in my apiary. Satisfaction guaranteed. 30 years a breeder. Tested, $1.50; select tested, $2.00. These ready now. Untested about May, 75c. D. T. Gaster, Rt. 2, Randleman, N. C.

WHY don't you drop E. D. Townsend, Northstar, Michigan, a postal card and receive in return a mimeograph sheet that gives more information regarding his package bees, with prices. I hope this list will please you and that I will have the opportunity of mailing it to you. Don't forget the place, E. D. Townsend, Northstar, Michigan.

PLAY SAFE—Investigate my safety payment plan. It will assure you of your packages when you want them. Don't be disappointed. Be sure of getting your packages on the dates you want them. I get no pay until after bees are shipped. Everybody looks for rush business this spring. Be sure of getting your packages in time to make a honey crop. Write me for full particulars and play safe. Three-banded Italian packages and queens since 1920. Satisfaction guaranteed. A. W. Nations, Donna, Texas.

SILVER RUN QUEENS—We offer queens from the best three-banded stock we can breed or buy. Cells built in mammoth colonies. Queens mated from strong nuclei. Each queen carefully inspected before shipment. We have reared thousands of queens that have given satisfaction throughout United States and Canada, working for up-to-date southern queen and package shippers. Write for special price on number of queens you need. Our motto: Each queen an advertisement for SILVER RUN APIARIES, Route 1, Phenix City, Ala.

HELP WANTED

WANTED—Right away, industrious young man to work with bees. State experience, age, weight and wages expected. Frank Parmales, LeRoy, N. Y.

DAIRY GOAT

DAIRY GOAT JOURNAL. Dept. 618, Fairbury, Nebr., monthly magazine, 25c yearly, 5 months, 10c.

RING NECK PHEASANTS

RINGNECK PHEASANT EGGS—From selected breeding stock. Booking orders for eggs, April, May and June deliveries. August Lotz Company, Boyd, Wis.

FOR SALE OR TRADE

FOR SALE OR TRADE—One hundred eight-frame hives, painted, unwired drawn combs, average thirty pounds, honey, no disease, $1.50 each complete. R. W. Baldwin, Greencastle, Ind.

MISCELLANEOUS

PLANT tansy seed to keep ants away. Send card for prices. A. E. Burns, 184 Appleton St., Arlington, Mass.

WANTED BEES

WANTED—Price on 100 2-lb. packages or two-frame nuclei for May 1 delivery. H. G. Quirin, Bellevue, Ohio.

Attention, Please!

Here we are again, **STEVENSON'S GOLDEN ITALIAN QUEENS,** raised the very best way in Southern Louisiana, where we have a very early and continuous honey flow.

This natural environment causes our bees to feed us abundantly with just the right food to develop us properly and make us: **REAL QUEENS OF QUALITY.**

Our progeny are large, very gentle, and the best of honey producers. Write **STEVENSON'S APIARIES, WESTWEGO, LA.,** for descriptive circular. Quotations on package bees and queens as per Marketing Agreement.

BOOK YOUR ORDER NOW FOR

Thagard's Master-Bred

IMPORTED ITALIAN BEES AND QUEENS

For eighteen years we have bred from breeders direct from Italy. Our strain is bred for gentleness and honey-producing qualities.

Here's Why Mr. Stoller Prefers MASTER-BRED BEES

"Last year we ordered some of your dark Italian queens. We notice your strain may be worked in rainy weather, or when our strain will sting. But the bees, of course, are not so beautiful. They are very good honey gatherers, and work better than the light strains in cool weather. Stoller Apiaries."

We have hundreds of other letters similar to this one.

Thousands of Package Bees to Offer

We are in position to make prompt shipment on all orders large or small.

PRICES

Two-pound package with queen.....$2.45
Three-pound package with queen..... 3.15
Queens .....75c each

WRITE FOR CIRCULAR AND PRICES IN LARGE QUANTITIES.

THE V. R. THAGARD COMPANY
Established 1918
GREENVILLE, ALABAMA

York's Package Bees

——QUALITY BRED ITALIANS——
BETTER THAN EVER—LARGER SUPPLY—BETTER SERVICE—YOUNG BEES—FULL WEIGHT—SAME PRICE.
Marketing Agreement Prices Are Your Protection for a Higher Standard of Quality.

Untested Queens .....75c each, any number
Tested Queens .....$1.50 each, any number
2-lb. pkgs. bees with queens.....$2.45 each, any number
3-lb. pkgs. bees with queens.....$3.15 each, any number
2-lb. pkgs. bees without queens.....$1.70 each, any number
3-lb. pkgs. bees without queens.....$2.40 each, any number
For additional lbs. of bees add.....70c each, any number
15% Discount to Recognized Dealers Only.

Many of the larger buyers book their orders early for preference of shipping dates and more are doing so than any time previous. The coming season promises to be one of the best in many years and it will be practical to put all idle equipment in use. Do not wait until the last minute, place your order now. Safe arrival, freedom from disease and satisfaction guaranteed.

We are also dealers for Lewis Beeware and Dadant's Foundation at Catalog Prices.

York Bee Company, Jesup, Georgia

(The Home of Quality Products)

XUM

WE ARE WORKING TOWARD ONE END—

The Prompt Delivery of Satisfaction-Guaranteed

Bees

AND

Queens

Headquarters, motor equipment and personnel.

TRADE AGREEMENT PRICES, OF COURSE:

2-lb. combless package with queen..... $2.45
3-lb. combless package, with queen..... 3.15
Queens, untested.....75c. Tested. $1.50

THE PUETT COMPANY, HAHIRA, GEORGIA

"Where satisfaction is a certainty."

FREE

Three Months' Subscription

Send in your neighbor's subscription for one year to Gleanings in Bee Culture, and we will extend your subscription 3 months.

••

Gleanings in Bee Culture
BOX G-6, MEDINA, OHIO

Package Bees and Queens

Three-band Italian or Gray Caucasians. Prompt shipment. Either strain gentle and thrifty. Shipment by express or parcel post. Safe delivery guaranteed. 2-lb. package with untested queen, $2.45. 3-lb. package with untested queen, $3.15. Untested queens, 75c each. We give you full weight young bees. Light but well made shipping cages and crating. No disease. Your PATRONAGE SOLICITED.

Crenshaw County Apiaries
Rutledge, Alabama

Protect your buildings from fire, lightning, wind and weather before advancing costs force next price raise.
Ask for Catalog 88 . . . Send roof measurements.
THE EDWARDS MANUFACTURING CO.
533-583 BUTLER STREET CINCINNATI, OHIO

B. B. PLIERS AND HIVE TOOL COMBINED. Practical frame lifter and holder, price, $1.00. Scraper for quick clean work, price, $1.00. CALIFORNIA BEE & TOOL CO., 810 W. Pedregosa St., Santa Barbara, Calif.

AMERICAN HONEY PRODUCERS' BULLETIN BOARD

(Continued from page 274.)

A state or local association may affiliate with the American Honey Producers' League by paying $12.00 annual fee. Affiliated organizations in good standing are entitled to send a delegate to the national convention to assist in the transaction of business.

Free queen offer holds good until June 1. One free queen bee will be sent to each new member of the American Honey Producers' League. If you wish to take advantage of this offer, please send your $1.00 dues at once, and state that you wish to have one of the queens.

Arlene Weidenkopf, Secretary-Treasurer, American Honey Producers' League, Box 2020, University Station, Madison, Wisconsin.

QUEENS QUEENS

PURE THREE-BANDED ITALIANS

Treat yourself to real money makers by giving our select young laying queens a trial. These queens are bred from choice queens of the northern honey fields. Be safe and buy where you are sure of **guaranteed satisfaction.**

Select untested queens..75c, any number

No charge for clipping.

The Albany Apiaries

R. T. Pattison & Son. ALBANY, GA.

PACKAGE BEES AND QUEENS

Satisfaction guaranteed, health certificate, fast overnight express direct to the North in twenty-four hours south of great lakes. Customer wrote that ours were the best he had ever handled. One of our queens tied in test for production in West. J. H. Waibel is our queen breeder, who for years was queen breeder for David Running, Sumterville, Alabama.

A. J. HOOK & CO., EUTAW, ALABAMA

Package Bees---for May Rush Orders

PURE ITALIANS—A PROVEN GOOD WORKER STRAIN

We give PROMPT ATTENTION and the experienced service of 12 years handling packages. VALDOSTA offers the fastest Railway Express Service in the SOUTH to ALL POINTS NORTH.

2-lb. package with queen....$2.45 3-lb. Package with queen....$3.15

Packages without queens, 75c less.

See page 248, April Gleanings, for more particulars.

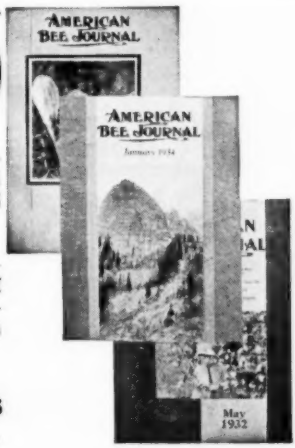
Charles Hillock, Valdosta, Georgia

12-Month Subscription with Bee Primer - - $1.00

American Bee Journal—monthly; published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey. **SAMPLE COPY FREE.**

Full 12-month subscription, with **BEE PRIMER**—22-pages, illustrated booklet to help the beginner—**BOTH FOR $1.00.** Combined with Gleanings in Bee Culture—both magazines and Primer, **ONE YEAR, $1.60.** This offer good only in the United States. Address—

American Bee Journal, Hamilton, Illinois



PACKAGE BEES

BRIGHT ITALIANS

Powerful young queens. Not booked up for May; can ship any date. Overweight when shipped; full weight when received. State health certificate. Full satisfaction. Marketing agreement prices.

HONEY BOWL APIARIES

Reserve, Louisiana.

Hessmer Bee Farm

ITALIAN BEES AND QUEENS

2 lbs. bees and queen..... .....$2.45 each
3 lbs. bees and queen..... 3.15 each

June 1st: 2-lb. pkgs., $1.95 each; 3-lb. pkgs., $2.65 each. Each additional pound bees, 70c. Dealers' discount, 15%.

Satisfaction, safe arrival guaranteed.

HESSMER BEE FARM

Willie Roy, Prop.

HESSMER, LA.

NORMAN'S
Package Bees & Queens

Pure 3-banded Italian Bees and Queens of finest quality now ready and awaiting your order. Give me a trial and be among my many satisfied customers. Prompt and efficient service. Safe arrival and satisfaction in U. S. and Canada. State health certificate furnished. F. O. B. express, shipping point, Ramer, Ala.

——TO JUNE 1——

Untested queens, 75c each. Tested queens, $1.50. 2-lb. pkg. with queen, $2.45 each. 3-lb. pkg. with queen, $3.15 each. 15% discount to all dealers. All packages 10% overweight.

JOHN A. NORMAN, LAPINE, ALA.

Yancey Hustler

PACKAGE BEES

2-LB. WITH QUEEN, $2.45
3-LB. WITH QUEEN, 3.15

QUICK SERVICE AND SATISFACTION.

Caney Valley Apiaries

BOX 1147 BAY CITY, TEXAS

Three-Banded Italian Queens and Package Bees

SHIPPED THE DAY YOU WANT THEM. BETTER SERVICE, HIGHER GRADE PACKAGES AND QUEENS.

SPECIAL NIGHT EXPRESS INSURES FEW LOSSES. HEALTH CERTIFICATE WITH EACH SHIPMENT.

Untested queens, each	$0.75
2-lb. pkg. bees with queen	2.45
3-lb. pkg. bees with queen	3.15
Each additional pound of bees	.70

For queenless packages, deduct price of queen.

For immediate shipment, send your order to

W. O. Gibbs Co., Box 81, Brookfield, Ga.

EDITORIALS

(Continued from page 290.)

Of course, the bee journals denied the canard. Leading beekeepers, including Frank Benton, then head of bee work in the Bureau of Entomology, sent protests and denials to the publishers of the "lies." But still the papers continued to revamp the yarn in one form and another.

In the same way a few years ago the oyster industry received a serious blow from a news story that went the rounds of the press to the effect that oysters could be and were infested with typhoid fever germs. Even today many a woman is afraid to give her family raw oysters. The facts are that there was no foundation for the oyster lie, but newspapers of the yellow order and those of better standing continued to rehash the story.

For "diseased honey" it has been suggested the use of afb honey; for diseased combs, afb combs, and so on.

In conformity with this policy our Gleanings staff have been making the substitutions in the manuscripts with the consent of the writers. We do not see how any correspondent can object to a sane and safe policy that will protect the good

(Continued on page 311.)

GASPARD'S

High quality Golden and three-banded Italian queens and package bees for spring delivery. Book orders now and reserve shipping date.

COMB PACKAGES WITH QUEENS

2-lb. package with queen and a frame of brood .....$2.45 each

3-lb. package with queen and a frame of brood .....$3.15 each

If larger packages are desired, for each additional frame of brood, or for each additional pound of bees, add 70c to the above 2 and 3 pound package prices. Combless packages with queens shipped on sugar syrup, same prices as comb packages.

Prompt and efficient service. Safe arrival guaranteed, and a health certificate with each shipment. Orders booked with 10% down, balance at shipping time. 15% to dealers.

Address—

J. L. GASPARD, HESSMER, LA.

Hive Tool and Frame Handler. You can examine the brood and combs, look for the queen, etc., in one-half the time with this tool. Remove heavy combs from the center of the hive with ease. Handle has scraper and pry. Coil spring inside handles acts to urge the jaws apart. Nickel-plated. Length 7 in. Price, $1.50, postpaid. Satisfaction guaranteed.

Ernest Fahlbeck, 406 S. Springfield Ave., Rockford, Ill.

Going to Lansing ! !

WE HAVE JUST RECEIVED A SHIPMENT OF—

ROOT QUALITY BEE SUPPLIES

and can give you fine service on your needs. Incidentally, while you are in Lansing, you can visit the Agricultural College.

PRICE!
MAIL ORDER BRAND AT LANSING. GET OUR PRICES. SAVE MONEY!

OUR PRICES ARE THE LOWEST

For merchandise that gives absolute satisfaction. Roots have been making bee supplies for over 60 years. The thousands of satisfied Root customers is your best guarantee.

M. H. HUNT & SON

510 North Cedar Lansing, Michigan

Root QUALITY BEE SUPPLIES

FOR SALE

PURE ITALIAN QUEENS & BEES
Nothing But the Best

Bright yellow and three-banded queens, 75c each.

1 lb. of bees with young queen, $1.75
2 lbs. of bees with young queen, 2.45
3 lbs. of bees with young queen, 3.15
You send for them, they go.

GRAYDON BROS.
Route 2. Greenville, Ala.

PACKAGE BEES—QUEENS
CAUCASIANS—ITALIANS

We are prepared to fill your rush orders with the best queens it is possible to produce, and young worker bees reared under most favorable conditions. Satisfied customers in every state. Untested queens, 75c each; two-pound package, $2.45; three-pound package, $3.15.

THE COFFEY APIARIES
WHITSETT, TEXAS.

Caucasians

Extra gentle, prolific, long tongue, little swarming, dependable workers—10% to 40% ahead of Italians. Foundation stock from the mountainous province of Terek, Caucasus.

Carniolans

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolan queens headed colonies producing an average 436 lbs. per colony over whole yard.

Untested queens, 75c each, both races.

Many customers report both races wintering well the past severe winter. Both races build up more rapidly during the unfavorable weather of our eastern and northern states. Free circular.

ALBERT G. HANN, GLEN GARDNER, N. J.

1000 2 and 3 pound packages for April and May shipment. Rush your order for some of our 12% oversize packages, with young laying queens. Free circular on request.

GOOCH APIARIES
Farmersville Texas

IT WILL PAY YOU
To get the wax working and foundation prices on

SCHMIDT'S ECONOMY FOUNDATION

Weed process. Satisfaction or money back.
Oscar H. Schmidt, Rt. 4, Bay City, Mich.

PATENTS—Williamson & Walton
Attorney for The A. I. Root Co.
Munsey Bldg. Washington, D. C.

A Good Rule to Go By

Buy your bees and queens from

ALABAMA APIARIES
MT. PLEASANT, ALA.

Book your order early. Queens, 75c.
Packages, $2.45 and $3.15.

PALMETTO QUALITY QUEENS

High grade superior quality. 32 years' experience insures best queens that experience can produce. Orders filled promptly, 75c each, any number. Book your orders in advance. Package bees at Agreement prices. You must be satisfied. No disease.

C. G. ELLISON, BELTON, S. C.

Mott's Northern-Bred Italians

Eliminates that swarm nuisance. Free list. Guaranteed purely mated.

April, May, $1.00; 3, $2.50; 6, $4.75; 12, $9.50. June, July, $1.00; 2 or more, 75c each; 50, $35.00; $100, $65.00. Fair to good breeders, $2.00, $3.00, $5.00. Virgins, 40c. Satisfaction guaranteed.

E. E. MOTT, GLENWOOD, MICH.

PACKAGE BEES AND QUEENS

Our bright Italians are good honey-gatherers. Owing to our special breeding method they swarm less, they build up fast. We make prompt shipments and use light cages. No disease ever been in our county. 2-lb. pkg. with queen, $2.45; after June, $1.95. 3-lb. pkg. with queen, $3.15; after June, $2.55. Queens, 75c each. After June 1, 50c each. Safe arrival, satisfaction guaranteed.

TAYLOR APIARIES, LUVERNE, ALABAMA

CRUMMEY'S

Better-Bred Three-Band Italian Queens.

3-lb. package with untested queen	**$3.15**
2-lb. package with untested queen	**2.45**
1 dozen untested queens postpaid	**9.00**
1 Untested queen, postpaid	**.75**

Book your order and reserve shipping date. Free from disease, safe arrival and satisfaction guaranteed. Discount to dealers. Fast express to all points.

JOHN A. CRUMMEY, JESUP, GA., BOX 351.

HOLD ON!

Give us but ONE package out of your regular yearly orders. Check hive this fall against the best hive you have. You'll get the surprise of your life.

Our **GOLDEN ITALIANS** are not only gentle, large and pretty to look at, but most important—**THEY PRODUCE!**

All queens guaranteed personally reared, this year's stock.

Queens, 75c each, postpaid; 2-lb. pkg. with queen, $2.45; 3-lb. pkg. with queen, $3.15.

SPOERRI APIARIES
ST. BERNARD P. O., LOUISIANA

WRITE

Root's

MEDINA, OHIO,

—for—

HIGH GRADE

Italian Queens

SATISFACTION GUARANTEED

HIGH CLASS PRINTING AT MODERATE PRICES. LABELS, STATIONERY, BOOKLETS, PAMPHLETS, ETC., ETC. THE A. I. ROOT CO., MEDINA, OHIO.

To Your Success

WILLIAMS' O. K. ITALIAN PACKAGE BEES AND QUEENS

They have stood the test of time and proved their ability to produce successful honey crops in the North, South, East, and West.

Select young queens, 75c each.

Full weight of bees in light cages, delivered promptly.

2-lb. size with queen, $2.45 ea. any number
3-lb. size with queen, $3.15 ea. any number

P. M. WILLIAMS
CASTLEBERRY ALABAMA

Package Bees

With Imported Italian Queens
May 15th or later. Booked out for earlier shipments.

2-lb. pkgs. with queens..$2.45 each.
3-lb. pkgs. with queens.. 3.15 each.
Queens ..... .75 each.

Prices reduced for June 1st or later.

THE CROWVILLE APIARIES
WINNSBORO, LA., Rt. 1.
J. J. Scott, Prop.

Townsend's PACKAGE BEES

I have leased several thousand swarms of bees in the package shipping states in the South, which will be put into packages, the size that my customers want them, by one of my dozen package men down there.

If you want some of these packages, and want them delivered upon the date your contract calls for, place your order with Townsend. Do this at once, as I am expecting the largest demand for package bees ever this coming season. Don't wait, get your order and delivery date in at once, or you may regret it.

The order should be placed with me here at Northstar, and the bees will be expressed direct to you from one of my bee yards in the South. Ask for a mimeograph sheet which gives more particulars and prices. Do it at once. Address E. D. Townsend, Northstar, Michgian.

TREAT YOURSELF TO THE BEST WITH

KNIGHT'S

Leather-Colored Italian

BEES AND QUEENS

Accredited and Certified by Agricultural Department of Alabama

They are the best honey-gatherers, the best winterers and gentle. All queens guaranteed mated pure. Guaranteed to please you and guaranteed not to supersede soon after introducing.

2-lb. pkg., includ. young queen. $2.45
3-lb. pkg., includ. young queen. 3.15
4-lb. pkg., includ. young queen. 3.85
5-lb. pkg., includ, young queen. 4.55

Queenless packages, deduct 75c.
Parcel post shipments: Add 10c plus postage. Write for delivered prices. **Queens, guaranteed mated pure, select, 75c. No charge for clipping.**

15% discount to dealers. Shipments on the day you name. Full weight guaranteed with young bees. Shipping begins about April 1.

JASPER KNIGHT
HAYNEVILLE, ALABAMA

How to Install Package Bees Successfully

Facts About Bees and Queens

Get your free copy of this catalog of information. Burleson's **Free Booklet** will help you with many of your problems. Write to

THOS. C. BURLESON

Box 450. Colusa, California.

NORMAN BROS.'

Packages and Queens

NOW READY

You can depend on them when wanted. They will make colonies you will be proud of. Our hives are boiling over with young baby bees and queen yard is in full operation. While quality and service are to be considered, ours will please you. Let us prove it with our large yellow selected 3-banded honey-gathering strain of Italians. We ship overweight packages, young bees in light weight cages. We are now ready to serve you best for 1936. Safe arrival, health certificate, entire satisfaction guaranteed in U. S. A. and Canada. 15% discount to dealers.

——Prices——

2-lb. pkg. with young queens.....$2.45 each
3-lb. pkg. with young queens..... 3.15 each
Untested queens ..... .75 each
Tested queens, double the price of untested queens. All packages F. O. B. express.

Norman Bros. Apiaries, Ramer, Ala.

May and June Packages

Let SMITH'S Superior bees and queens produce your honey crop. We supply you with the maximum amount of BABY bees. Hearty young queens and good service. You will not expect more for your money than we will give. Prices are lower in June, so let us book you for some early June orders. Add a pound of bees to your colonies and watch the difference. Complete satisfaction.

MAY PRICES:

Two pounds with queen, $2.45; three pounds with queen, $3.15. Selected queens, 75 each.

JUNE PRICES:

Two pounds with queen, $1.95; three pounds with queen, $2.55. Selected queens, 50c each. Order now. You will be pleased.

N. B. SMITH & COMPANY
CALHOUN, ALABAMA

CAUCASIAN BEES and QUEENS

for May Delivery

Let us book your orders now for May delivery. Queens, postpaid, untested, 75c each; select tested, $2.00 each. Breeders, $5.00 and $7.00 each. All packages, nuclei, and colonies, transportation extra, 2-lb. packages, each, with queens, $2.50; 3-lb. each, with queens, $3.25; larger size, add 75c for each additional pound bees wanted. Other sizes, write for prices.

BOLLING BEE CO., BOLLING, ALA.

24-HOUR SERVICE
——RUSH ORDERS——

QUEENS —— PACKAGES

3-banded Italian Queens and Packages
Hi-Quality—Efficient, Honest Service.
We Support the American Honey Institute. Do You?

Prices, April 1 to June 1, Any Number
Select untested young queens, (postpaid), 75c each
2-lb. pkg. and queen (exp. col.) $2.45 ea.
3-lb. pkg. and queen (exp. col.) $3.15 ea.
5-lb. pkg. and queen (orchard pkg), (exp. col.) $4.55 ea.
15% off to dealers on bees for resale.

Queens by air mail daily.
Wire Money for 24-hour Service.

BELLS HONEY & BEE CO.
HOUMA, LOUISIANA, U. S. A.
"In the Sunny South."

EDITORIALS

(Continued from page 307.)

name of honey, the praises of which have been sounded down through the ages of all that is best and fine.

On the other hand, the other names, unless dropped (and we don't repeat them again) will give our sweet a black eye. If the name honey ever gets besmirched by a careless reporter and his story is repeated again and again as has the Wiley lie, the very props of the industry will be knocked from under it. Let us take a stitch in time before it is too late.

We can stop it at conventions, and we editors of bee journals can cut out these vile words. How about bee books? Reporters seldom get their inspiration for sensation from these sources. New editions of the books should be changed, of course.

LOOK!

Three-banded Italian bees and queens of fine quality. They are real honey-gatherers and gentle to work with. Safe arrival and satisfaction guaranteed. Write for circular.

ALAMANCE BEE COMPANY

Geo. Elmo Curtis, Mgr. GRAHAM, N. C.

Queens That Produce Workers

Workers That Produce Honey

We can still supply 2 and 3 lb. packages Italian and Caucasian bees and queens for late April and May shipments. We also support the American Honey Institute on orders shipped.

Trade Agreement Prices.

E. W. PETERSON

HONEYBEE APIARIES

SANDWICH, ILLINOIS.

Lady-Like Caucasians

Guaranteed mated to a pure Caucasian drone, or we replace them. You are the judge.

WRITE FOR FREE CIRCULAR

Select untested queens, April 1 to June 1, 75c each. Two-pound packages of Caucasian bees with queen, $3.00 each. If you want genuine Mountain Gray Caucasian bees and queens,

Caucasian Apiaries

Brooklyn, Ala.

Is the Place to Get Them.

CHOICE ITALIAN QUEENS . . . . . 75c Each

Big, prolific queens. Our queens must satisfy. 15% discount to dealers. Health certificate.

A. M. KELLY

Bell, Florida.

——California Superior Quality——

Italian Package Bees and Queens

Write at once for information. Book your order now for prompt shipment.

AL WINN,

Rt. 2, Box 161. Petaluma, Calif.

Quality - Service - Prices

——Package Bees and Queens—Italians, Caucasians——

Are you one of our many satisfied customers? If not, give us one order. It will take only ONE. Direct Express Service.

SELECT LAYING QUEEN	$0.75
TWO-POUND PACKAGE WITH QUEEN	2.45
THREE-POUND PACKAGE WITH QUEEN	3.15

15% discount to approved dealers.

WEAVER APIARIES, NAVASOTA, TEXAS

Agents for Pinard Nailess Queen Cages.

PACKAGE BEES

QUALITY

QUANTITY

HEALTH

SERVICE

15% discount to approved dealers.

None but young and vigorous select laying queens. Prompt and efficient shipment.

• • •

2-lb. pkg. with laying queen.....$2.45
3-lb. pkg. with laying queen..... 3.15
Laying queens, each..... .75

• • •

PRICES FROM JUNE 1st:

2-lb. pkg. with laying queen.....$1.95
3-lb. pkg. with laying queen..... 2.55
Laying queens, each ..... .50

Garon Bee Co., Donaldsonville, La.

"BETTER-BRED QUEENS"

3-Banded Italians

We are prepared to handle your rush orders. Don't hesitate to send them to us. Raising queens and shipping packages is our only business. Not a side-line. We have left no stone unturned to give you the best queens obtainable and good, honest, well prepared packages. Give us a trial and be among our many satisfied customers.

Prices for Untested, Select Queens..75c 2-lb. packages with queen.....$2.45
3-lb. packages with queen.....$3.15 4-lb. packages with queen..... 3.85
Dealers wanted in all localities. Dealer's discount, 15%.

Calvert Apiaries, Calvert, Alabama

NORMAN'S QUEENS AND BEES

HAVE SATISFIED THOUSANDS OF BEEKEEPERS

They satisfy. Why? Because they are bred from the very highest of Italians obtainable, and are reared by men who know how. They will prove to your satisfaction. When you realize how my 3-banded Italian queens will help to increase your honey profits you will want no other kind.

2-pound packages with queens.....$2.45 each.
3-pound packages with queens..... 3.15 each.
Untested Queens ..... .75 each.
Tested Queens ..... 1.50 each.

All package bees F. O. B. express. I guarantee state health certificate, full weight of baby bees, light cages, safe arrival in U. S. and Canada, and satisfaction.

THE NORMAN APIARIES, LAPINE, ALABAMA

Package Bees & Queens

——FOR 1936——

By the pound, ton, or car.

The Victor Apiaries, Kyle, Texas

GOLDEN ITALIAN AND RED CLOVER QUEENS, 75c EACH.

Package bees, $2.45 for 2-lb. package with queen; $3.15 for 3-lb. package with queen. They have proven satisfactory over U. S. and Canada for over 35 years. They are as good as the best.

E. A. SIMMONS APIARIES
Powell Owen, Mgr. Greenville, Ala.

HUSTLING ITALIAN
QUEENS AND BEES

J. F.
McVay

2-lb. pkg. bees with queen...$2.45 each
3-lb. pkg. bees with queen... 3.15 each
Queens ..... .75 each
Dealers' discount, 15%.

JACKSON, ALA.

Fresh From Our Yards

We can make prompt shipment on package bees and queens.

		After June 1.
Untested queens	$0.75	$0.50
Tested queens	1.50	1.00
2-lb. pkg. and queen.	2.45	1.95
3-lb. pkg. and queen.	3.15	2.55
Additional lb of bees	.70	.60

For queenless packages, deduct price of queen. 15% discount to dealers.

Send us your order now for June 1st shipment at reduced prices.

Citronelle Bee Co., Inc.
J. T. Haertel, Mgr.
Citronelle, Ala.

Three-Banded Italian Bees and Queens

As you read these lines and wonder where you can get your bees and queens on short notice, also quality and satisfaction, we wish you to know that we have everything ready for the biggest season in our history as shippers of bees.

We know there are firms that ship more bees than we do.

We also know there are some that have been in business longer.

But we do not believe any will give you better service, better packages, or better queens.

In the past five years we have not delayed an order over 24 hours or filed a claim for bees lost in transit. The past season we did not have a complaint of queens being superseded. We are proud of our record.

Prices to June 1:

Young laying queen.....75c each
Tested $1.50
Two-lb. package with queen.....$2.45
Three-lb. package with queen.....3.15
15% discount to dealers.

Shaw & Homan
SHANNON, MISSISSIPPI

Three-Ply
AIRCO
Foundation

•

SALES ALWAYS ON THE INCREASE

•

SEE YOUR ROOT DEALER

Root QUALITY
BEE SUPPLIES

Genuine Three-Banded Italian Bees and Queens

Special Attention Given Rush Orders

QUALITY AND SERVICE—We are prepared to furnish you with the finest quality young genuine Italian work bees and the most select laying genuine Italian queens, shipped in well ventilated, light-weight crates. We guarantee safe arrival, full-weight packages. Prompt and careful attention to all orders.

TERMS AND BOOKING—Make up your order from the prices listed and mail to us, together with check or money order for the amount of the order; Canadian shipments in U. S. funds, stating the approximate date you desire shipment made, and if by express or parcel post, giving correct shipping point. No. C. O. D. shipments made.

REPLACEMENTS—If queens are received dead or in unusable condition, return same to us in their respective cages for replacement without charge. If packages arrive dead or in bad condition, be sure to secure the express company "bad order notation." Mail this to us, giving full data, for replacement without charge.

EXPRESS INFORMATION—We prefer to ship packages by express, with express charges collect at your end. This is cheaper for you and more satisfactory. In this way you have to figure only the actual cost of bees, as the express charge may be paid at your end.

PARCEL POST INFORMATION—If you desire shipment by parcel post have your postmaster give you the rate on the basis of 2-lb. package weighing 6 pounds, and 3-lb. package weighing 7 pounds. From this you can know the amount of parcel post charges to remit with the order. If you fail to figure this, and remit an incorrect amount it causes inconvenience and sometimes delay.

PRICES FOR GENUINE ITALIAN QUEENS—POSTPAID TO YOU

Shipment April 1 to June 1		Shipment June 1 to Oct. 1.	
Untested ..... Each	$0.75	Untested ..... Each	$0.50
Tested ..... Each	1.50	Tested ..... Each	1.00

PACKAGE BEES—EXPRESS CHARGES COLLECT

Shipment April 1 to June 1		Shipment June 1 to Oct. 1.	
2-lb. Package with Queen..... Each	$2.45	Each	$1.95
3-lb. Package with Queen..... Each	3.15	Each	2.55
2-lb. Package without Queen..... Each	1.70	Each	1.45
3-lb. Package without Queen..... Each	2.40	Each	2.05
For each additional pound of bees.....	.70	.....	.60

For parcel post shipment add 10c per package to above prices, plus parcel post charges.

15 per cent discount allowed by the marketing agreement to dealers only. What is meant by dealers is a party or firm ordering bees for resale to other persons, and if you are a dealer your order must be signed as such.

TO SECURE BEST DATINGS, BOOK YOUR ORDERS NOW
NO DISEASE KNOWN HERE.

Holder Apiaries, Citronelle, Alabama

PACKAGE BEES

PRICES

Two-pound package with select young laying queen.....$2.45 each
Three-pound package with select young laying queen..... 3.15 each
Untested laying queens, Italian ..... .75 each
Untested laying queens, Caucasian ..... .75 each

15% discount to dealers.

Descriptive circular and directions for installing package bees upon request.

CALIFORNIA APIARIES

J. E. WING. COTTONWOOD, CALIFORNIA.

NORTHERN CALIFORNIA SHIPPERS

BANTA AND WIRE

Quality Bees and Queens

REDDING, CALIF.

2-lb. pkg. bees with queen, $2.45; 3-lb. pkg. bees with queen, $3.15.
Young laying queen, 75c. 15% Discount to Dealers.

ITALIAN QUEENS AND BEES. QUEEN REARING OUR SPECIALTY.

We offer you the very best and guarantee satisfaction. Order now.
All shipments covered by STATE inspection certificate.
Marketing Agreement Prices.

SHASTA APIARIES

SHASTA, Shasta Co., CALIF.

Express Office, Redding, Calif.

GEO. W. MOORE F. W. CHAPMAN

Package Bees and Queens

Your choice of queens.

Carniolan, Caucasian, Italian

I am better prepared than ever before to give prompt, efficient service to my customers. Over 20 years of efficient service in same location. Queens reared in yards well isolated from all other bees, guaranteeing pure mating.

Select laying queen.....75c each
Two-pound package of bees with queen.....$2.45 each
Three-pound package of bees with queen.....$3.15 each

15% discount to dealers.

H. E. GRAHAM, - Cameron, Texas

XUM

....THRIFTY....

three-banded Italian bees and queens for May delivery. Our Thrifty bees are guaranteed to please. We ship full weight packages of young bees. Our crates are light but strongly constructed.

• • •

2-lb. package with queen.....$2.45 each.
3-lb. package with queen..... 3.15 each.
Select untested queens..... .75 each
15% discount to dealers.

• • •

Our forty-four years' experience assures you of the finest stock and best of service.

• • •

Wire your rush orders and be sure of quick delivery.

• • •

W. J. Forehand & Sons, Fort Deposit, Alabama
Breeders since 1892.

Reliable Service, Reliable Package Bees and Queens

Three Band Italian Bees and Queens Price List, Via Express Collect

2-lb. package bees with select untested queen .....$2.45 each
3-lb. package bees with select untested queen .....$3.15 each
Select Untested Queens...75c each
Select Tested Queens...$1.50 each
Prices of package bees via mail quoted on request.

15% discount on the above prices will be allowed dealers on bees for re-sale.

Support the American Honey Institute.

Formerly Hayneville Apiary Co.

W. E. HARRELL
HAYNEVILLE, ALABAMA

Place Your Order Now

Prospects for a honey crop were never better. Put your empty equipment to work. We offer three-band Italian bees of the very best quality, with select young queens, shipped in light weight cages. All full weight packages guaranteed to please you.

——PRICES——

2-lb. package with queen.. .....$2.45
3-lb. package with queen..... .. 3.15
Select untested queens..... .75
15% discount to dealers.

Geo. A. Hummer & Son
PRAIRIE POINT, MISSISSIPPI
Established 1892.

FAST--DO NOT BREAK COMBS

View of the reel of 8-frame **"LIFETIME"** showing heavy pressed steel heads, both top and bottom, and also new, smooth type basket sides.

"LIFETIME" extractors reverse the combs while the reel spins at top speed.

No Mechanical Troubles

Here is what a California Inspector says:

"Your **SUPERIOR 'LIFETIME'** is surely the fastest extractor sold today. In my inspection work, I have seen different kinds of extractors at work, from radials to 2-frame hand extractors, but I have never seen one that works as good as the **'LIFETIME.' They are fast, do not break the combs nor have we had any mechanical trouble.**" (Signed)

WALTER CALLISON,
Dinuba, California.

•••

SOMETHING NEW!
SUPERIOR WIRED FOUNDATION
Also Plain Medium Brood and Thin Super

We are in the market for beeswax at highest prices.

•••

SUPERIOR HONEY COMPANY

Manufacturers of Bee Supplies

FACTORY AT OGDEN, UTAH

Branches at IDAHO FALLS, IDAHO, and LOS ANGELES, CALIFORNIA

BEEKEEPERS AHOY!

You are all aboard the good ship beekeeping—what if the boat sinks? Maybe you are like the man on the ocean liner out in the middle of the ocean. A friend came running to tell him that the boat was sinking. The reply was, "What do I care? I don't own any stock in it."

Believe it or not—**American Honey Instute** is your boat and it is carrying every beekeeper to a happy landing. The old worm-eaten boat on which you were riding was down to the railing, and you were throwing honey overboard to keep from drowning. The good ship **American Honey Institute** came up on the wind and hauled the wreck ashore, then took you on and carried you home.

American Honey Institute is the greatest boat afloat for beekeepers. Will you help keep it afloat and well repaired, or are you going to let it sink and again find yourself swimming around in mid-ocean without even an oar to grab? Singly the beekeepers of America can not make headway for a single year. United behind **American Honey Institute** they can create the greatest advertising in history at a cost of one-twentieth of a cent per pound. They can increase the consumption of honey from the present 1½ pounds per capita to 5 and even 10 pounds.

It will require the united effort of every beekeeper producing at his best to fill the demand. Prosperity to the honey producer will grow beyond belief. But this can't happen without your accepting a reasonable share of financial responsibility. A paid-in pledge will make you a member of **American Honey Institute** and bring you a copy of the 1935 annual report. Do it now. At the same time fill out the coupon below and send it to the Institute office.

I pledge to give annually for five years $.....to **American Honey Institute** as my share of a National Honey Advertising Campaign.

Signed .....

Address .....

American Honey Institute Honor Roll

Michigan. — **O. H. Schmidt, Bay City,** $50; Richard Smith, Bay City, 50c; F. W. Schroeder, Detroit, $2.50; Edward Schuenemann, Mt. Clemens, 50c; L Sherburne, Berrien Springs, 50c; John Shoemaker, Zeeland, 50c; M. R. Simpkins, Martin, 50c; Deroy Simpson, Flushing, $3.50; Frank Slusher, Traverse City, 50c; N. J. Smith, Coopersville, 50c; C. J. Snover, Grand Rapids, $12.20; Clarence A. Sparks, Belding, 50c; L. A. Sprague, Mesick, 50c; Ralph J. Sprenger, Coleman, $1.50; Wm. E. Staach, Detroit, $2; Stephen Apiaries, West Branch, $5; Frank Stewart, Grandville, 50c; Ed Stone, Fremont, 50c; Robert Strait, Evart, $1; Wm. Strickland, Hastings, 50c; Ed Swerid, Royal Oak, 50c; Hessel Taroma, Falmouth, $1; Herman Terbel, Hastings, 50c; Arthur Thayer, Freeland, 50c; Russell Thayer, Freeland, 50c; Geo. Towler, Whittaker, 50c; D. L. Ulman, Saginaw, 50c; C. H. Umstead, Ida, $2; Vettie Van Allen, Hudsonville, 50c; Wilbur Vas, Jamestown, 50c; Frank Vert, Flint, 50c; Perry Vesberg, Grandville, 50c; W. J. Watson, Coldwater, $1; Geo. Wendling, North Branch, 50c; Frank Wesley, Adrian, 50c; Harry White, Grand Rapids, 50c; F. B. Wilde, Wayland, $2.50; D. Windish, White Pigeon, $5; W. W. Wood, Flushing, 50c; A. G. Woodman, Grand Rapids, $25; *Alvin Wright, Pinconning, $1; Paul Wuerfel, Ann Arbor, $1, Fred Wunch, Ada, 50c; Gerald Wunch, Ada, $2; Herman Wunderlin, Kalamazoo, $1; L. V. Yerkes, Northville, 50c; Ralph Yerkes, Howell, 50c; Oscar Zahn, Saginaw, 50c; Herman Zasbel, Hastings, 50c; Stephen Zupko, Wyandotte, 50c. Total, $578.10.

Minnesota—*Ralph Aldrich, Buffalo, $1; I. C. Anderson, Lake Benton, $5; G. A. Barbisch, LaCrescent, $1; Beals & Engles, Thief River Falls, $96.88; Rev. Burian, Hopkins, $2; S. F. Doll, Buffalo, $10; Henry Eggers, McIntosh, $3.45; N. J. Ellingson, Northfield, $6; Edwin Englert, Mendota, $2; Everard Flygary, South Haven, $3; F. O. Gessner, Forest Lake, $6.38; August Halgren, Duluth, $1; Harry Harberg, Halsted, $14; M. H. Haydak, St. Paul, $1; Chas. S. Hoffman, Janesville, $2; Honey Sales Co., Minneapolis, $5; S. Hyberg, Homel, $3.52; Isak Isaksen, Minneapolis, $2.69; Francis Jager, Minneapolis, $10; Paul S. Johnson, Callaway, $5; Harry Kouba, Hutchinson, $2; Jacob Leuthner, Wahkan, $1; Fred Marquette, St. Hilaire, $9.20; G. C. Mathews, Minneapolis, $6.58; August Melin, Onamia, $1; R. S. Menefee, Morton, $1; Northwest Supply Co., Moorhead, $12.50; Melford Olson, Red Lake Falls, 5; *M. S. Penhallegon, Princeton, $1; A. E. Rodgers, Sauk Center, $2.50; F. A. Rojina, Excelsior, $5; Earl Rood, Mankato, $3.31; A. I. Root Co., St. Paul, $5; Geo. Seastream, Moorehead, $40; Sisters of St. Benedict, Crookston, $5; Sundberg Bros., Fergus Falls, $20.22; Harold Sundean, Crookston, $10; Dr. M. C. Tanquary, St. Paul, $76.55; A. J. Van Rossum, Mapleton, $1.50; C. A. Zuppann, Minneapolis, $2.22. Total, $391.50.

Mississippi—Claude Blankenship, Mayhew, 50c; Edgar Blankenship, Mayhew, $1; Fletcher Blankenship, Mayhew, 50c; Hiram Blankenship, Mayhew, $1; J. D. Blankenship, Mayhew, 50c; Lawrence Blankenship, Mayhew, 50c; Wilson Blankenship, Mayhew, 50c; Willie Burch, Mayhew, $1; Otis Caldwell, Mayhew, $1; Katherine Chapman, Mayhew, $5; E. W. Coleman, Gunnison, $3; M. S. Fortune, Mayhew, $5; Mrs. M. S. Fortune, Mayhew, $1; Kerr Houston, Mayhew, 50c; Lockie Lowrey, Mayhew, $1; Clay Lyle, State College, $2.50; Donnie Lee McLaughlin, Mayhew, $1; D. McCollom, Mayhew, $2.50; Ed. Redman, Mayhew, $1; William Routh, Mayhew, $5; Elmer Smith, Mayhew, 50c; Windle Stover, Mayhew, 50c; Tom Turner, Mayhew, 50c; J. B. Yancey, Mayhew, $1. Total, $36.50.

(This space donated to American Honey Institute by Gleanings in Bee Culture.)

Italian Bees - Queens

Guaranteed Delivery

•

Market Agreement Prices

All Orders Going Out Promptly

MERRILL BEE COMPANY, BUCATUNNA, MISS.
MISSISSIPPI'S OLDEST SHIPPER.

Three-band Italian Queens and Combless Package Bees

As good as there are shipped in as light built packages as it is safe to ship in. Shipped on the day you want them. State health certificate with each shipment. Enough overweight is added to take care of shrinkage while en route. Live arrival guaranteed. No orders too large to be handled out promptly.

QUEENS BY MAIL PREPAID

Untested, each 75c
Tested, each $1.50

BEES FOR EXPRESS SHIPMENT
With Untested Queen, F. O. B. here.

Two-pound packages .....$2.45 each
Three-pound packages ... .. 3.15 each
For mail shipments of bees, add 10c for each package, plus postage.

D. C. Jackson, Funston, Ga.

Hurry!!!

That empty hive can be made profitable by the addition of a package of bees. Three-band Italians, certified and accredited by the State Department of Agriculture.

•

2-lb. package with queen, $2.45
3-lb. package with queen, $3.15

•

Prices reduced June 1.

•

J. M. Cutts & Sons
R. F. D. No. 1.
MONTGOMERY, ALA.

JENSEN'S

Package Bees and Queens

PURE THREE-BANDED ITALIANS

With our vastly increased output of bees and queens, through enlarged apiaries and queen mating yards, improved facilities, more experienced help, and better organization in all departments, we can give our usual "second to none" SERVICE, on a much bigger scale than ever before.

We have spared no effort nor expense in producing, for you, the VERY BEST bees and queens. They will be prepared and delivered to the trains in the kind of packages and crates that years of experience and scientific research have proven to be the best, and that have the approval of the Southern States Bee Culture Field Laboratory, collaborating with the Railway Express Companies. And we are prepared to give **QUICK SERVICE** on **RUSH ORDERS.** If in a hurry, **GIVE US A TRIAL,** and join the host of satisfied customers who have and are continuing with us.

PACKAGES

Two-pound packages with select 1936 queens.....$2.45 each.
Three-pound packages with select 1936 queens..... 3.15 each.
Four and five pound packages.....add 70c per pound to the above.

NUCLEI

Two frames brood and honey, 2 lbs. of bees and queen introduced, $4.15 each.
Three frames brood and honey, 3 lbs. of bees and queen introduced, $5.60 each.

QUEENS

Select Untested (no culls).....75c each, postpaid.

Everything fresh from our own yards. Health Certificate.

Jensen's Apiaries, Macon, Mississippi

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